Cloud Management Diaries

vmware®
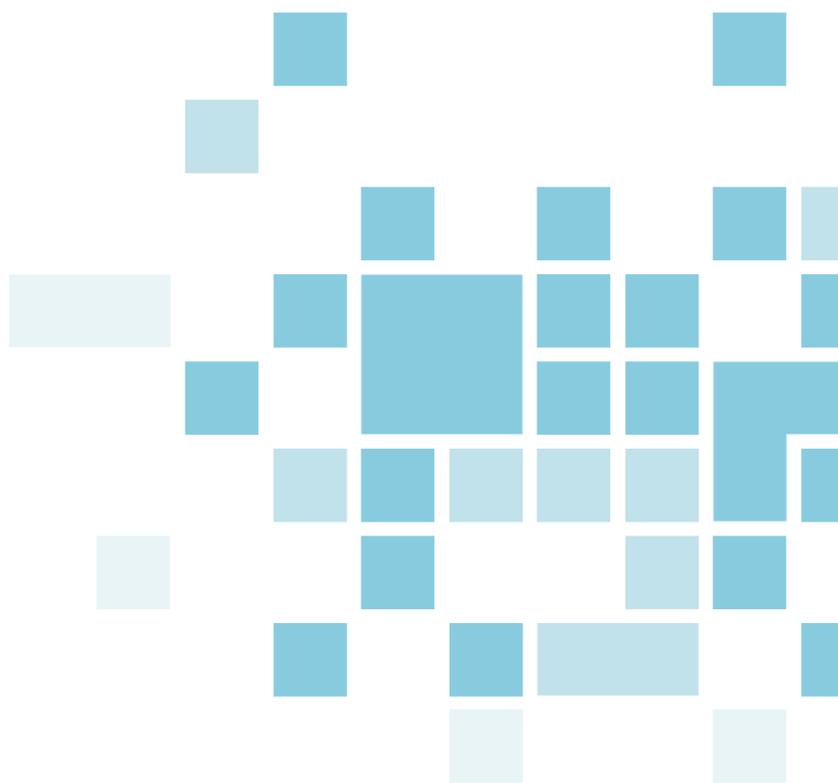
Business Service

Business Service: Diary Entry 01

This multinational corporation provides information technology (IT) services and professional services to businesses of all sizes around the world. We spoke with the lead design engineer who is responsible for evaluation and verification of hardware, software and tools for client deployment. His team's findings provide best practices and preferred technologies that are offered to their clients based on proven results. In addition, the design engineer provides support to his company's professional services team during deployment and to end customers' operations teams.

Move to Virtualization and Cloud

The design engineer shared that while his infrastructure is often referred to as a lab, he was adamant that his infrastructure was the size of a larger enterprise company. He needs that size to replicate the scale and complexity for their clients. Many of the company's customers have already virtualized and are on the path to cloud adoption, thus a large percentage of his lab runs as a private cloud to reflect their current environments. He also indicated that operating in a virtualized cloud environment allowed for an agile infrastructure, so quick reconfigurations were possible as well as being able to provide troubleshooting and support for their clients by replicating their architecture.

"Most of our infrastructure runs as a private cloud, but 20% runs as a traditional server application infrastructure. We need to do that to replicate our customers' environments who have custom or packaged applications outside of their cloud."

Infrastructure Operation Requirements

The design engineer noted that because their infrastructure was both large and constantly changing to validate new technologies and trouble shoot customer issues, a monitoring tool that was enterprise class but easy to configure and maintain was required. When seeking a commercial solution, the following were top requirements:

- View of the entire shared environment

- Holistic view that could be drilled down to an engineering view

- Easy and fast deployment

- Simplistic display to make the information actionable

- Out of the box monitoring for VM and supporting hosts

Solution

The design engineer revealed that they started with a soft evaluation in which they reviewed product documentation, met with the vendors and watched demonstrations. Then the best solutions were fully evaluated. He explained that they had to work with the vendors because the scale of their infrastructure needs full licensing as many evaluation licenses limit the software to fewer cores than they have on a single blade. Based on their criteria and evaluation process, they selected vCenter Operations Management Suite (vC Ops). The company's infrastructure contains 32 blades and supports 3000 to 6000 VMs now being monitored by vC Ops.

"We had an internal tool for a while but only top engineers could understand it or use it. It took a long to time to reconfigure for the changes commonly happening in our dynamic environment. It just wasn't practical."

"VCOPs has made our team more proactive. We used to just ignore alerts because there were so many false positives. But with vC Ops, we can quickly tell if it is a real issue and then get the exact information needed to address it."

ROI

The design engineer said his team is trying to figure out how to assign an exact dollar amount to the value they receive from VCOPs. He explained that at the highest level, they have moved from management by crisis to exception resolution. They focus on real problems and have the data to make quick, deliberate and justified resolutions.

He explained that even without hard ROI numbers the positive impact for vC Ops has been tremendous and highlighted the following:

- Proactive approach to operations management

- Increased team efficiency and effectiveness

- Reduced costs by only purchasing what is needed

- Correct sizing of VMs by CPU, memory, storage and bandwidth requirements

- Unified team operation with simple consistent dashboard

"With the smart monitoring I have reclaimed substantial time that my team used to spend looking at wasteful alerts based on static threshold values."

Business Service: Diary Entry 02

This company provides the largest collectibles auctioneer and auction houses in the world. Their business offers both on-line and physical auctions that are enabled and supported by IT and their systems. I spoke with the vice president (VP) of IT and he shared that the IT systems facilitate everything from bidder profiles, item information and tracking, bid detail to financial transactions and shipping. IT also provides the front and backend of their auction website and is their largest store front and revenue generator.

"IT is critical to the business. We average $91,000 in transactions per hour. If IT is down, our business is dead."

Move to Virtualization and Cloud

The VP explained that the initial move to virtualization and the cloud was driven to increase efficiencies. Specifically, the auction company needed faster hardware and software

"The aggressive use of virtualization and our private cloud has allowed us to become a very efficient team. It just wasn't possible to be this responsive to the business without those technologies."

deployment to increase faster time to market and manage the dynamic needs of their business. However the VP was quick to point out that his entire infrastructure was managed by only four people. This meant the virtualization and cloud operations had to make deployments and maintenance easier for his small team. Today they are 90% virtualized with 250 servers and run with 13 hosts per cluster.

Infrastructure Operation Requirements

The VP shared that initially they were just operating blind to what was going on inside a VM and were using some basic box monitoring like CPU and memory. He admitted that did not give a very good indication to how a virtual machine (VM) was performing and thus had no idea how well the applications were meeting user expectations.
The VP wanted to completely change this and have real time information on his infrastructure. He recounted the following key attributes for a VM monitoring and management solution:

- Clear visibility into VM performance

- Historical information for Troubleshooting

- Capacity sizing

- SLA reporting

- Tunable to ensure performance for critical business application

- Proactive notifications of real problems not just threshold alarms

Solution

The VP said they evaluated several tools that claimed to have good VM monitoring but found that many were rudimentary and didn't provide more sophisticated monitoring, tracking or dashboard functionality. He selected vCenter Operations Management Suite (vC Ops) and said the installation was very easy and was completed in just a couple of hours. The auction house is using vC Ops on all their servers and recently began storage monitoring as well.

""vC Ops is well above the rest in functionality and quality. Ironically it was the simplest to deploy with two virtual applications."

"We run a private cloud and we now deploy a new application in two hours, where it used to take us two weeks."

"We expect to deploy Microsoft Exchange 2013 in 60 days on our cloud solution. The last time, Exchange took us almost 6 months to complete deployment."

ROI

The VP was very enthusiastic about the value vC Ops brings to his team and his company. He stated the following benefits were making a tremendous difference to his small team:

- System visibility with a dashboard

- Ability to identify and resolve

- problems more quickly

- Improve uptime and availability

"The VMware vCenter Operations Suite has improved IT efficiencies by about 20%. A problem that used to take 4-8 hours to solve can now be resolved in a single hour."

Next Steps

The company is thinking about adding metrics from public cloud computing that they use occasionally to vet the concept of monitoring a hybrid cloud.

Business Service: Diary Entry 03

This high-tech and science company provides design, deployment, and operation of IT systems to government agencies and commercial enterprise customers. We spoke with two key members of the design and operations teams who both shared that their current focus is helping customers get to the cloud. They shared that their customers who are often considered behind the curve with respect to technology are leading much of industry and that requires balancing expectations with secure and reliable solutions.

"All the concerns that come up with a cloud solution can be mitigated with a well thought out design and implementation"

Move to Virtualization and Cloud

The team said that all of their customers were at least 60% virtualized with some as high as 90%. They stated that their customers have reaped the consolidation benefits of virtualization and they are seeking agility and resiliency that the cloud offers. They shared that their customers have geographically dispersed employees both domestically and internationally

"We and our customers fully embrace the ideals of the cloud and the benefits it brings. We are not blinded by marketing messages or fearful of security issues, we know the real business value the cloud can bring."

and that a cloud solution could make the user experience better while maintaining tight control on the data and applications. Many of this company's customers are already looking at hybrid clouds, including across their own datacenters and with dedicated infrastructure at public providers to ensure tight security. in a small 'data closet' at some of their offices. The company is also creating and managing private clouds at each datacenter. The cloud initiative will continue to deliver cost savings but should create agility for the business by increasing IT's responsiveness.

Infrastructure Operation Requirements

The two team members shared that although their requirements list was short, they discovered that satisfying it was challenging. This is the complete requirements list:

- Complete monitoring of the virtualized environment

- Ability to group hardware and software to support a tenant approach

- Dashboards and reporting by tenant

- Ability to predict performance issues

- High reliability of tool

- Low tool maintenance requirements

"We manage a lot of customer solutions as tenants within the virtualized infrastructure and the tool had to support that model. That functionality was hard to find."

Solution

"We were able to have vC Ops up and running in 15 minutes and already gathering data."

The team shared that after an exhaustive search and evaluation process, they selected VMware vCenter Operations Management Suite (vC Ops) and have been very happy with it. They have recently deployed it in three different environments that range from 9 to 12 blades and it is running 100 to 200 VMs. They also have MYSQL and MS SQL running in the virtualized environment without issue on VMware virtualization technology. All of these solutions provide a tenant environment that allows the customer to separate different teams or internal clients to ensure a secure and auditable environment. In addition they have been pleasantly surprised by the effectiveness of the smart monitoring functionality.

"With a customizable dashboard we can visualize each tenant independently as well as the entire virtualized environment."

ROI

"The business value is huge. Our team spends less time maintaining a system that is more reliable and costs less. That makes us look very good to our customers."

Both of the team members have worked with all of the major enterprise monitoring solutions over the years but were very impressed with the vC Ops solution and the value it brings to their company and end customers. The benefits cited are:

- More stable environment

- Reduced sprawl

- Improve equipment utilization

- Optimized purchasing strategy

- Fact based capacity planning

- Increased team efficiency

- Reduced time spent on false or   errant alerts

- Less time spent managing a monitoring tool

"The predictive analysis feature is excellent. We know exactly when the performance of VM will be affected and can take proactive actions to prevent that."

Next Steps

The two team members said they deal with "big data" and are currently working on pulling Hadoop into the virtualized environment.

14

Business Service: Diary Entry 04

I spoke with the senior systems engineer for one of the largest communications companies in the United States. He is the subject matter expert for virtualization and cloud implementations for the entire company. His company provides digital cable television, telecommunications and wireless services to their business and residential customers. The company, as expected, is heavily reliant on IT technology services to operate their business including the delivery of content, customer service and business applications.

"I often present to our customers how we run and operate our datacenters as an example of how to deploy and operate a modern datacenter."

Move to Virtualization and Cloud

Several years ago the solution The engineer shared that years ago they implemented a 'virtualization first' initiative where new applications, servers and upgrades needed to be virtualized if at all possible. While a few old legacy systems remain on standalone servers, he explained that they are

"We receive requests daily for more hardware resources for virtual machines and this was starting to drive costs back up without any real justification."

90% virtualized today. The initial move to virtualization created tremendous financial savings and simplified operations for IT. He revealed that many developers and members of operations teams, often placing application performance issues on a lack of virtual machine (VM) resources, constantly requested additional memory, storage, or CPU cores.

Capacity Planning Requirements

The engineer said that while they had existing monitoring tools, they often did not provide enough information to know why a virtual machine was performing slowly. Thus, the virtualization team often had to acquiesce to requests for more hardware in an attempt to resolve performance issues. To change this pattern of always buying hardware, the engineer decided that purchasing capacity planning tools was necessary. He established the following key requirements for capacity planning tooling:

- Show the health and performance of each VM

- Clearly show the utilization of memory, CPU, storage and I/O

- Provide trending to predict when new resources were needed

- Generate reports to be shared with stakeholders

- Be alerted when thresholds were exceeded

- Simple installation

Solution

The engineer disclosed that they evaluated four products and vCenter Operations Management Suite (vC Ops) was selected as a clear winner. The product met all the key requirements in addition to providing some features and functionality not on the original requirements list that they highly value. One of those features is the smart monitoring that learns how their system operates and only alerts them if something is out of normal operating ranges. They currently have vC Ops deployed on over 100 hosts with 2000+ VMs running at any given time and all monitored by vC Ops. He explained that databases are still on standalone physicals but they expect those to be moved to the virtual environment soon.

""The solution was very easy to install and get up and running and provides more visibility over monitoring tools which is a huge upside for a capacity planning solution."

ROI

The engineer is very happy with the vC Ops solution and said that the installation was exceptionally easy and required almost no configuration to have it up and running in a few hours. He went on to say that vC Ops is providing more value than they expected and are receiving business benefits in the following areas.

- Ability to proactively respond to

- prevent issues from occurring

- Single pane of glass for entire virtual environment

- Accurate view of VM performances

- Improved virtualization team efficiency

- Reduced costs by only adding needed resources

- Reporting for the business, operations and R&D

He shared that if vC Ops were suddenly removed, they would be back to guessing and using trial error to improve the performance of VMs. That, he said, would remove the confidence the rest of the communication company gained with virtualization and cloud solutions.

"The development and operations teams were constantly telling us that the VMs did not have enough memory. With vC Ops installed it clearly pointed out that our Java programs were holding memory because they were waiting for processing time. We allocated more cores and took memory away and the performance issues have vanished."

Next Steps

The engineer shared that they are working on licensing restrictions with Oracle and Microsoft SQL to run them in the virtual environment.

Business Service: Diary Entry 05

This European high tech company offers IT services and expertise to its clients. They provide recommendations, enterprise architecture, installation, customized solutions and operations. As such, they must constantly evaluate products and solutions not only for client applications but for their own IT operations as well. We spoke with their senior technical architect who provides expertise in the area of virtualization and cloud infrastructure.

Move to Virtualization and Cloud

The vCloud Service Provider He shared that many of their clients are transitioning from simple virtualization initiatives to dynamic and scaling cloud environments. This migration is fueled by the client's desire to receive the following business benefits: Agility, reduced costs, increased uptime and disaster recovery. However, to deliver these benefits they needed new solutions with the ability to quickly stand up virtual machines (VMs) and employ consistent processes to properly load and deploy applications. The solutions would need to help guide and enable clients in their day to day operational tasks.

"We needed a reliable VM deployment solution. We have clients who were seeing 70% of their internal deployments fail. Their process was very complex and there were numerous communication issues between their developers and the IT deployment teams. We needed a simple, consistent and reliable solution to help our clients."

Infrastructure Operation and Automation Requirements

The architect shared that automation became a critical requirement in the maturing virtualization and cloud space. He explained that he looked at many existing automation and orchestration solutions from the large traditional software providers. However, solutions that were built to manage traditional datacenter infrastructures did not manage the virtual environments or cloud deployments very well. He also highlighted that traditional automation tools are very complicated to use and difficult to install and configure. He revealed that as a result, most clients today are using scripting to deploy complex applications but they are error prone and not scalable.

"The traditional enterprise automation solutions just don't work well with virtualization and the cloud. They are mired in the operating models of the past."

He recently sought out new automation solutions with the following criteria:

- Straight forward installation and configuration

- Simple to use and manage

- Application independence

- Update capability for patches

- Work with different PaaS and IaaS providers

- Auto-scaling (adding and removing capacity)

- Template automation stacks to leverage

Solution

After reviewing several automation products, the architect selected vFabric Application Director for their go-to automation and deployment solutions. He also noted that this solution is from VMware which is a market leader in virtualization and worked flawlessly with the virtual and cloud environments. He shared that it provides a flexible platform to support a variety of applications, architectures and infrastructures. He remarked that it is easy to create an automated process and edit those processes to automate updates and patches.

ROI

"Moving thirteen datacenters run by thirteen teams to six data centers run by one team is the catalyst for huge improvements in many areas."

The architect was excited to deploy the solution broadly across their clients and noted that they will receive a number benefits from the solution. He was quick to note that the benefits received will often be dependent on their particular environment and industry.

"The vFabric Application Management Suite makes everything easier for our clients to manage their virtual and cloud environments."

He offered the following list of benefits vFabric Application Management Suite provides:

- Speed and ease to deploy

- Reliability and consistent deployments

- Increased audibility

- Enforced IT governance

- Increased security by controlling roles and authority

- Increased agility

- Enabled dynamic cloud operation and scaling for cost control

Healthcare

Healthcare:
Diary Entry 01

The pharmaceutical company interviewed employs more than 120,000 people with major research and manufacturing facilities located globally. We spoke with the senior manager of infrastructure for global IT operations. He shared that they operate three major datacenters in the US, Europe and Asia, as well as numerous data closets in offices around the globe. The company operates under the rules and requirements of the Federal Drug Administration, Health Insurance Portability and Accountability Act (HIPAA) , Sarbanes–Oxley (SOX), and the European Union pharmaceutical standards. Their IT system must operate within these regulations and provide reporting to verify continual adherence.

Move to Virtualization and Cloud

This company was introduced to a VFive years ago the company started its move toward virtualization to reduce costs and simplify operations. The senior manager revealed that today they are 70% virtualized and have an eighteen month plan to become 90%. This will also finish their efforts to consolidate to the three datacenters. He noted, however, that some applications and services will need to run locally in a small 'data closet' at some of their offices. The company is also creating and managing private clouds at each datacenter. The cloud initiative will continue to deliver cost savings but should create agility for the business by increasing IT's responsiveness.

"We originally moved to virtualization for pure cost savings. Now, however, we seek simplified operations and increased IT agility."

Infrastructure Operation Requirements

The senior manager shared that the initial use model for the virtual machine (VM) infrastructure management were simple due to users with a wide range of skills who would be using the tool. The requirements were:

- Notification if a VM was having performance problems

- Threshold monitoring

- Ability to drill down in the VM and find what was causing performance issues

- Simple installation

- Easy to use

- Low maintenance

"When we looked at VM monitoring and resolution tools they had to be easy to deploy and manage. The guys who operate the data closets are a jack of all trades, from desktop, to email, to network. They needed a tool that is simple to use."

Solution

The senior manager and his team looked at few tools in the market but quickly found the VMware vCenter Operations Suite (VCOPs) to be the best tool for their needs. They were familiar with VMware and have experience with their software use models, so installing VCOPs only took a couple of hours. It provided all the key monitors and alerts needed and they found that it could drill down to show why a VM was slow.

"Our least technical IT guys could deploy vC Ops in just a couple of hours."

"It shows everything you need to know if it is short on memory, or storage, or if the network was choking I/O. It makes it really simple to know what to fix."

ROI

"vCenter Operations Management has cut the time to resolve issues in half."

The senior manager has been very pleased with the tool and stated that it provides a lot more value than they anticipated. The business benefits they have received are the following:

- Empowering the local IT teams to find and resolve issues

- Few problems escalate to the global IT team

- Faster issues resolution

- Better understanding of the performance and operation of the virtual environment

- Very low maintenance

"With VCOPs our remote local teams can monitor, manage, and resolve most local virtual-based issues. That is a huge benefit. It means better uptime and better response to the business."

Next Steps

The pharmaceutical company continues to evaluate the plug-ins into VCOPs to see if it can provide a great monitoring role of infrastructure beyond just the virtual environment.

Healthcare:
Diary Entry 02

This healthcare company employs over 600 physicians and offers clinical, hospital, acute care, emergency, and transplant services, and an additional 80 other medical specialties and subspecialties to their customers. Furthermore, they offer healthcare industry specific applications to member facilities and hospitals. The system engineer we spoke with leads the platform teams and manages their virtualization and cloud environments. He shared that his hospital is now 100% reliant on IT for operation, supporting patient records, medical services, pharmacy orders, and much of the integrated patient monitoring. He said IT has become so critical that during their last outage they closed the offices and had to redirect patients to other healthcare providers.

Move to the Cloud

The engineer said they are currently running almost 1,100 virtual machines on over 100 hosts and have achieved 87% virtualization. The healthcare provider is running email, ERP, CRM, and numerous EPIC applications on their private cloud. The move to the cloud and virtualization was initially driven by a 'green' initiative to reduce power and cooling consumption. The IT team knew it was also generate better server utilization and reduce equipment costs as well. The engineer shared that moving to a cloud solution, however, allows them to easily add additional medical facilities and employee from acquisitions. Their positive experience with the cloud has led them to evaluate the ability to offer SaaS solutions to member hospitals given that their platform already meets HIPAA requirements.

"Initially it was a big green push that got us going on virtualization. But now savings, and ease of adding new users and applications, and a possible new business, has everyone here very excited about the cloud."

Infrastructure Operation Requirements

With the healthcare provider's growing reliance on the cloud and underlying virtualization, they sought a tool that would provide real time information on how a virtual machine (VM) is performing. The tool also needed to provide key information so they could determine the causing of a performance issue, making resolution easier and faster

"We needed a solution you could drill down on. Saying disk I/O was low or memory was 90% utilized wasn't good enough. We needed to find out why, so we could address the real problem."

Solution

The engineer shared that the company evaluated four different solutions. Two of them provided very rudimentary VM performance information and were mostly a box monitoring solution. The remaining two solutions had good VM performance information but ultimately he selected vCenter Operations Management Suite (vC Ops) because it has superior drill down capabilities. The engineer said that they just deployed vC Ops version 5 which only took 45 minutes to fully install it.

"VCOPs was the only tool that was granular enough to tell specifically what exactly was causing an issue within the VM."

"VMware got the product right. It does everything you need and can have it installed and working correctly in under an hour. That is a huge departure from my experience with other monitoring tools."

ROI

"VMware got the product right. It does everything you need and can have it installed and working correctly in under an hour. That is a huge departure from my experience with other monitoring tools."

The engineer said that infrastructure visibility is much better and that problem resolution is significantly faster. He said that vC Ops is driving a lot of the confidence that they can operate a private cloud and offer SaaS based services to member organizations. He also said that with a cloud solution his team can add large numbers of users from acquisitions quickly while ensuring they are receiving excellent services.

"Using VMs and the cloud, it is easy to get new users up and running on new hardware and have that instantly monitored. Then we use vC Ops to resolve any VM issues. It is a very good solution for our business."

Next Steps

The engineer said they are investigating virtual desktops and part of the evaluation will be to use vC Ops to monitor that environment as well.

Healthcare:
Diary Entry 03

This UK-based healthcare technology provider supports over 18,000 customers and hundreds of IT systems, offering project delivery, technical infrastructure, with customer and general practice services. We spoke with the director of Health Informatics who explained that running over 2,500 IT services and managing multiple data sources ranging from PeopleSoft to Oracle to Project and Portfolio Management and spreadsheets created a barrier to understanding how much was spent on IT and in what areas. Furthermore, the company needed to know the breakdown of IT costs by service, geography and customer. The company decided to transform its budget utilization and method of cost allocation to bring greater visibility and better decision-making to the business. In addition, 50,000 data line items needed to be processed every month, and processing them manually was nearly impossible.

Running IT Like a Business with Better Decision Making

The director shared that the company's business leaders realized that the key to meeting their needs was to implement an IT solution that would allow them to view IT costs and utilization by service, geography and customer. This level of detail is vital not only for ongoing cost control, but also for effective collaboration with customers on the cost saving process. Therefore the IT solution also needed to provide customer tools for understanding which services they use, how much these services cost and what their alternatives are. platform already meets HIPAA requirements.

Solution

The company leverages VMware's IT Financial Management, which provides a complete solution for the management and automation of financial IT business processes including:

- Proactive cost control vs. plan and budget

- Customer visibility and charging

- Continual IT cost reduction analysis

- Actual vs. Forecast and Re-forecasting

- Budgeting and Planning

Customers access accurate, detailed and current views of their IT services usage and costs, and are now able to select the exact level of service they need, with complete understanding of what is it they are getting and what the cost is.

"Finally, we have the cost visibility we need to make fact-based, and not gut-feel, business decisions. We're working together now to truly align IT with the business."

ROI

"We now have real-time IT cost visibility into 2,500 IT services, including email, storage, network, desktops and many others."

The director stated the following benefits were making a tremendous difference to his company:

- £1million IT cost savings

- Solution automatically processes more than 500,000 cost items a month

- Customers have complete visibility and control on their IT spending

"We're now having fact-based discussions between IT and customers on issues such as 'why is email costing so much', 'can these servers be consolidated', 'does this application really need such high availability', 'can we end-of-life this application' and other similar questions."

Healthcare:
Diary Entry 04

This fortune top 20 company distributes pharmaceuticals and provides health information technology, medical supplies, and care management tools to hospitals and care facilities. We spoke with the lead architect that supports the software development and testing organization. He shared that his primary focus is to ensure the developers and testers have the ability to rapidly setup environments that represent typical customer infrastructure so software solutions can be optimized and validated. In addition, his lab is often used when R&D needs to recreate an exact customer environment to help in the reproduction and resolution customer issues.

Move to Virtualization and Cloud

The architect said the need to supply a constantly changing environment is a clear match with benefits offered by virtualization and cloud technologies. He shared that they offer self-service catalog options as well as traditional ticket request systems. But the ability to quickly standup and tear down environments is reliant on having the correct virtual machines (VMs) in the catalog and automation that makes the VMs easy to provision. However, with so much change it is often challenging to know the state and health of each VM and system as a whole. Today the company predominantly operates a private cloud based on vigorous healthcare industry requirements but they are leveraging computer power options of the public cloud for some non-mission critical applications.

"Operating our infrastructure in a cloud environment is the most efficient way to serve the dynamic needs of our internal customers."

38

Virtual Machine and Cloud Monitoring Requirements

The architect shared that they need a single place to view the performance of the cloud environment as well as the performance and utilization of each VM. This drove the following solution requirements:

- Categorize and group infrastructure and VMs

- Single dashboard to see the health of the entire system and each defined group

- Support both Oracle and SQL databases in a virtualized environment

- Manage network fencing to ensure projects were on separate networks

Solution

"We have deployed vC Ops and are already seeing some benefits. What's impressive is the fact that we can monitor our virtualized SQL and Oracle databases in addition to the VMs."

The architect said they evaluated all the applicable solutions in the market and selected the VMware vCenter Operations Management Suite (vC Ops). vC Ops is currently managing one physical location but additional deployments will cover three more locations with the reporting rolling up to a single dashboard. The dashboard will also have each physical location represented for independent tracking and monitoring. This will ensure that each environment meets the needs of the R&D and QA teams regardless of the team or the infrastructure location, making it truly a cloud solution.

"We have several dashboards, some by physical location, and some by projects and some by specific R&D teams. But they will all rollup in one single high-level dashboard where we can see our entire managed cloud environment."

ROI

"The biggest benefit from vC Ops is the reduction in hours people spend monitoring and managing the environment."

The health care company expects to invest far less time on the administrative side of the cloud and virtualization deployment. In addition they have seen the following benefits from the vC Ops deployment:

- Increased operations team efficiency

- Unified single console operation

- Standardized platform and operation

- Resource savings

- Improved hardware utilization

- Faster testing cycles with self service

"With vC Ops there is a strong reduction in setup and maintenance time. And in an environment where it changes constantly, that adds up."

Next Steps

"We are moving in two directions. The first is to further automate the self-service catalog. The second is move to a hybrid option. Today the public and private clouds and their applications are completely separate. We see value in using vC Ops to manage and monitor the hybrid operations."

Healthcare:
Diary Entry 05

A leading national nonprofit health organization operates hospitals, long-term care, assisted living, and nursing colleges. All share a virtualization and cloud strategy. I spoke with the system engineer who leads the cloud strategy and oversees the deployment. He explained that they are operating an internal private cloud to not only meet the diverse and distributed IT demands but to also comply with industry regulations including HIPAA, Sarbox and the Patriot Act. The engineer stated that their cloud runs all of the organization's mission critical applications, including patient records, pharmacy prescriptions, insurance, billing and internal business applications such as email, HR, and contracting.

Move to Virtualization and Cloud

The healthcare organization had moved to virtualization over four years ago and are over 70% virtualized supporting cloud operations which allow them to more quickly respond to the needs of the business. The engineer shared that with many different locations and business types, it was key to provide a consolidated IT solution that efficiently and reliably met the needs of the business. Virtualization and the cloud for this organization is as much about availability and reliability as it is about cost savings. While the healthcare organization operates a cloud, it is not a self-service model and they use a traditional ticket and manual fulfillment process. requirements.

"Moving to the cloud does allow us to serve the business better in terms of responsiveness and reliability. Uptime in healthcare is critical."

Infrastructure Operation Requirements

The engineer said their number one requirement was predictive analysis of available capacity and failure conditions. He also wanted to know whether a virtual machine (VM) was oversized or undersized. If performance were to be impacted, what is needed to prevent it? More CPUs, additional threading, memory, storage, or I/O speed? He was also looking to integrate this analysis tool with their storage and networking solutions so they could see the entire environment with the current and predicted utilization up to six months out.

"I want to know when a VM or application will run into problems and why. Then I can proactively address that."

Solution

The engineer highlighted that they looked at several solutions but only one had a robust predictive feature they could leverage for capacity planning. The health organization selected that unique product, vC Ops, and deployed it on 3,500 VMs across 13 virtual centers including their disaster recovery datacenter. He shared that while they were not explicitly looking at monitoring, they found the smart monitors, within vC Ops to be very valuable. He explained that it alerts his team of major fluctuations relative to historical operating parameters. This information now influences their hardware roadmap and proactive maintenance schedules. In addition, he has discovered functionality that will allow IT to do a show back model so the services IT delivers are transparent.

"There is only one tool that could answer this question. What infrastructure will we need next month and what will need in six months. That tool is VMware's vC Ops."

ROI

"In our line of business, uptime and availability is the most critical metric. vC Ops gives me the information I need to ensure we exceed our five 9s target."

The engineer explained that capacity planning and preventive maintenance is positively affecting IT operations' uptime and reliability. He also shared some other, unexpected benefits from vC Ops:

- Visibility to understand how the cloud is performing

- Proactive approach to maintenance

- Improved uptime

- IT and leadership can look at the same dashboard and make business decisions

- Ability to employ a show back model to align services and priorities

"Using VMs and the cloud, it is easy to get new users up and running on new hardware and have that instantly monitored. Then we use vC Ops to resolve any VM issues. It is a very good solution for our business."

Next Steps

The engineer said they are investigating virtual desktops and part of the evaluation will be to use vC Ops to monitor that environment as well.
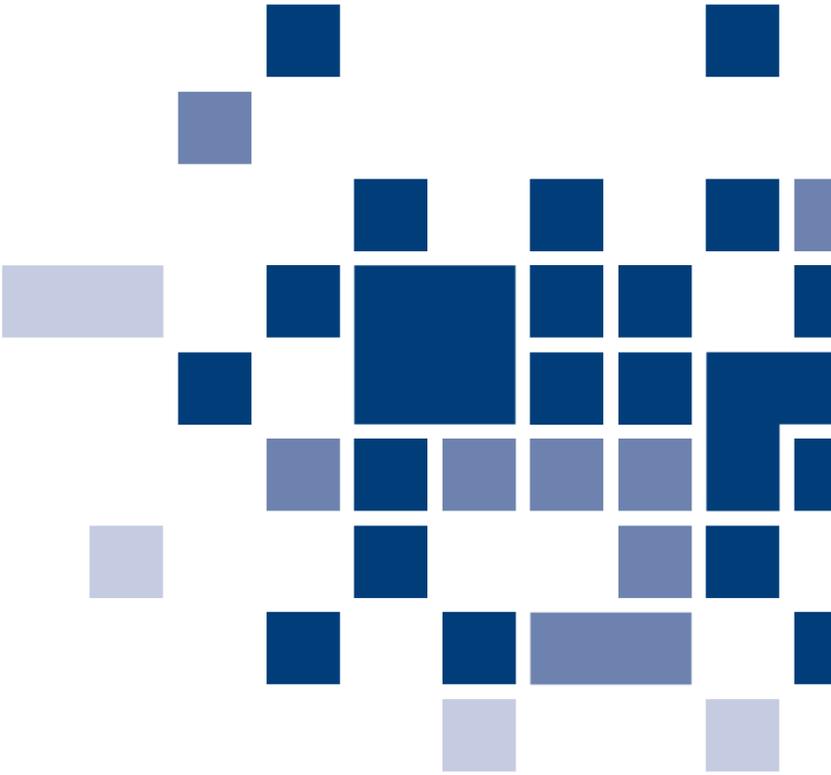
Financial Services

Financial Services: Diary Entry 01

This Fortune 500 insurance company supports personal and commercial property customers across the US. We spoke with the assistant vice president (AVP) of IT finance who explained that as the company grew organically and through acquisition, its IT organization was challenged with supporting rapidly growing new types of business while minimizing costs. Believing the only way to manage IT spending was to manage IT costs and usage, this company moved to a shared services model where all IT costs are charged back to each line of business based on service usage.

Running IT Like a Business as a Shared Services Broker

Business leaders recognized the efficiencies gained by merging similar services. However, the company still faced challenges in scaling their manual use of spreadsheets to process and allocate IT costs by service. Staff spent the whole month processing data instead of analyzing it, so progress was hindered.

Setting up IT as a separate organization charged with delivering services to all business units was the obvious next step. This would ensure all costs were charged back to the consuming business units.

"If you don't understand your expenses you can't understand your business or how to improve it."
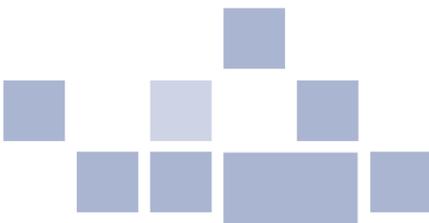
Solution

The AVP shared that the company needed an IT financial management system that matched their shared services model and one that could automate the collection and processing of data. The company considered several solutions and chose VMware's IT Financial Management (ITFM) because it provides a complete solution for the management and automation of financial IT business processes including:

- Service Costing

- Cost transparency and chargeback/showback

- Proactive cost control vs. plan and budget

- Actual vs. Forecast and Re-forecasting

- What-if scenarios for evaluating options

After implementing ITFM, the AVP explained, the business units received accurate, detailed and current views of their IT service usage and costs, with complete understanding of what they were getting and what it cost. With this new level of visibility into their cost, the business units questioned the value they were receiving from various services and why they were consuming so much. Service consumption started to change as a result, and then cost savings were realized.

"The financial information we share with our business partners is open and transparent. They know exactly what they are paying for."

ROI

"Before VMware's ITFM, we had to prepare all these reports manually. We asked ourselves if this is how we thought we should be adding value and the answer was clearly no – we should automate this process and add value by engaging sooner with analysis in how we could reduce costs."

- Several additional areas were mentioned as generating strong measurable ROI:

- Reduced startup investment costs

- Improved ability to bill clients based on real IT utilization and costs

- Ability to instantly book new business and know they have the infrastructure to deliver it

- Focus on the business, not IT

"The financial information we share with our business partners is open and transparent. They know exactly what they are paying for."

Financial Services: Diary Entry 02

I interviewed the technical architect from a multinational financial services corporation representing one of the most known global brands. This company processes millions of financial transactions monthly and experiences tremendous volume increases during holidays and other key global events. The architect explained that these huge swinging in transactional volume drive the IT team to purchase and deploy hardware for the highest possible peak.

Move to Virtualization and Cloud

The need to buy and support infrastructure for just a few peak weeks a year creates exceptional spending and waste. The architect explained that they are aggressively pursuing virtualization to extract more value out of existing hardware to help control those costs. He shared that in addition to virtualization, they have a cloud initiative to create a more agile and responsive process. This new process would provide a self-service model to various IT teams to further enable business. The move to the cloud would also allow the financial services company to purchase and deploy equipment ahead of actual demand. This would radically change the current process that has hardware sitting in a store room, or idling and consuming power and cooling months in advance of the actual need.

"It used to take months to requisition a new server and get it up and running. So many times the business unit would request equipment and services six months in advance just to ensure it was ready. Then the hardware would idle 90% of the time consuming time and money until it was needed."
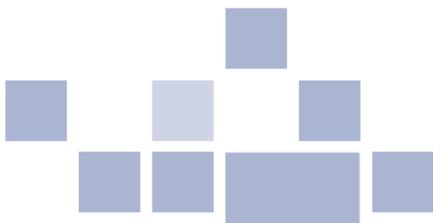
Infrastructure Operation Requirements

In order to realize the vision of the virtualization and cloud initiative, they needed a way to control and automate the deployment of the software and virtual machines (VMs). The architect explained that they wanted to operate like an internal platform as a service (PAAS) business, complete with charge backs and implementation service level agreements. He shared the following requirements were needed to operate their PAAS as a business:

- End user self-service with full application setup

- Automated provisioning, configuration and catalog management

- Performance monitoring automatically configured and initiated with deployment

- Consumption monitoring and reporting for services and underlying resources

"It was a simple concept, we needed a tool to give us automation and monitoring as well as to track who was using what services and hardware. However, finding a single product to do it all was difficult."

Infrastructure Operation Requirements

The financial services company looked at many of the top enterprise cloud vendors in their evaluation process but found that many failed to meet their needs for an automated solution. The architect cited that only one solution was very close out of the box: vFabric Application Management Suite from VMware. He explained that not only did VMware have the highest evaluation score, but they seemed more willing to support his company and team in achieving their goal and wanted to be his business partner. The vFabric Application Management Suite will be deployed on over a thousand blades, managing 3,000 to 5,000 VMs. vFabric Application Management Suite is supporting their mission critical financial transaction business as well other key applications to enable the business and their customers.

ROI

"We expect to see a 30-50% annual CapEx savings by better utilizing what we already own and operate."

"The architect was excited about the benefits the tool is bringing to the company. vFabric Application Management is supporting their transformation from an IT cost center to that of business partner providing a state-of-the-art PAAS to their internal customers. He highlighted the following benefits from vFabric Application Management Suite:

- Ability to run IT like a business

- Faster time to market

- Reduced costs

- Better hardware utilization

- Demonstrating value by showing service usage

- Dynamic scaling to meeting peak transition needs

Next Steps

The architect was looking forward to the next phase of the project where the infrastructure could dynamically provision additional resources from the cloud when the business warranted a fully automated process.

Financial Services: Diary Entry 03

This European company provides insurance, reinsurance, and financial services to both corporations and individual customers. Financial and insurance industries today are largely facilitated by electronic transactions and thus IT is often the foundation and critical enabler of the business. If IT is down, the business often is as well. We spoke with the IT manager and IT virtualization administrator for the financial side of the business. They own the operations infrastructure for their line of business but also most coordinate with similar roles in the other lines of business to provide IT continuity throughout the company.

Move to Virtualization and Cloud

For several years the financial institution has leveraged virtualization as a way to reduce costs and improve operation uptime. However, the manager and administrator shared that often the business has concerns about reliability, performance and uptime on virtualized equipment. Thus they strike a balance by utilizing tools and solutions for superior operations as well as by constantly producing documentation, from which the business receives reliable value.

"The business wants to save money but they are still a little unsure of virtualization and cloud. That concern creates the need for us to prove to business leaders that we (IT) are delivering a fast, cost effective and very reliable solution to the business."

Infrastructure Capacity Management Requirements

The manager and administrator shared that they were primarily looking at a capacity management tool that would allow them to predict issues and allow them to remediate them before business was impacted. However, in addition to understanding future hardware needs, being able to see real-time monitoring and receive performance and reliability reporting was required. Their tool requirements were devised into the following two categories:

Capacity

- Validate virtual machine (VM) resources with respect to desired operating thresholds

- Report available space on cluster

- Identify hot spots

- Track and trend number of deployments and available capacity

- Single dashboard for IT to show ongoing performance and possible issues

- Display and track hardware and software dedicated to specified services

- Reports for the business on usage, deployments, availability and performance

Operational

- Understand and track the availability of the virtual environment

- Ensure redundancy solutions are operating correctly

- Validate and report that all hosts and VMs are up

- Track and report the performance of VMs

- Ensure the system is always regulation compliant

- Provide alarms and alerts when hosts or VMs experience problems

"We may have been looking at it a little narrowly but the capacity management piece was the most important. However were hoping to a find a tool that could do much more."

Solution

"We classify our services into platinum, gold, and silver and with vC Ops we know the infrastructure is dedicated to each service and its availability and performance."

VMware vCenter Operations Management Suite (vC Ops) was selected and has been rolled out across each of the business units within the insurance and financial company. The initial deployment consisted of 110 hosts that support six virtual centers running 3,000 to 3,500 VMs. The solution met both the capacity planning criteria as well as operational requirements. Dashboards were created that track the performance and availability of individual VMs, individual services, and the cloud environments. That information is used to ensure uptime and availability as well as knowing when more memory, disk space, or computer power is needed, or if a trend of increasing load justifies a new host server or blade.

ROI

The manager and administrator explained that IT is always looking to save money but those are not the driving objectives of their organization. They reported that uptime, availability and transparency to the business is IT's top focus. They highlighted that vC Ops helps them deliver on the those requirements providing information that allows them to proactively manage the infrastructure as well as providing the reporting to show and document the key metrics to their business leaders.

"We can proactively manage the entire virtual environment to ensure maximum availability, compliance and uptime. That makes the business happy."

Non-Profit

Non-Profit:
Diary Entry 01

This college system provides services and support to over 85,000 students and more than 20,000 additional users including faculty and staff. We spoke with the CIO who is responsible for creating and implementing the IT strategy. That strategy needs to support new and existing services for a growing user base which increased 30% over the last three years. The CIO has the added challenge of geographically distributed campuses, and like many educational institutions, must work within a budget that is much smaller than needed.

Move to Virtualization and Cloud

The CIO's strategy was initiated in late 2008 with a "VM first" policy that was targeted at reducing costs while raising IT service reliability to five 9s. His strategy continued with full utilization of cloud services, using internal private clouds, public clouds and some specific application hybrid operations. He further shared that this strategy included shifting the IT team mindset to that of service function and where IT could measure services delivered for a chargeback and showback. He believes this service model will keep his team aligned with the school's and their students' needs.

"We are 97% virtualized now that our VM first policy has delivered a capex savings of $600k."

Infrastructure Operation Requirements

Today the college system operates two primary data centers with failover and backup to each other. But the college IT team also operates 14 smaller, 'closet datacenters' that provide local applications, access and security, and other services. In addition to the 90+ physical hosts and 800 virtual machines (VMs), they are also running over 20 host servers supporting hundreds of virtual desktops. The college's infrastructure monitoring had to apply to their diverse architecture while meeting the following requirements:

- Easy to install and maintain

- Support physical equipment in diverse locations

- Adaptive and smart monitoring

- Basic threshold metric monitoring

Solution

The CIO's team evaluated two tools that advertised learning monitoring but the CIO stated that VMware vCenter Operations Suite (vC Ops) was a clear winner. The CIO further explained that working on an ELA with VMware provided a compelling licensing model that was flexible and would support the colleges' growth. He went on to say that one item that was not specifically required was the support for his chargeback and showback practices but found that vC Ops supported that easily as well.

"There are only two tools that have smart monitoring and vC Ops tools is the better tool by far and a much better value."

ROI

"With a previous solution we would spend 10-12 hours a week on just administration. With vC Ops we spend just 1–2 hours."

The CIO stated that the college has received many business benefits from implementing vC Ops. He shared that his team can now isolate and resolve performance issues much more accurately and quickly. He also said that vC Ops simplified operation and monitoring of multiple datacenters made the IT teams more productive and efficient because they are less distracted by constant alarms. The CIO said the IT teams spend far fewer cycles reviewing data or maintaining monitoring systems.

"With the smart monitoring I have reclaimed substantial time that my team used to spend looking at wasteful alerts based on static threshold values."

Next Steps

The college is continuing to move to an increasingly hybrid IT approach and is investigating how the IT team can operate and monitor both internal private cloud resources and those from a public cloud in a single pane of glass.

Non-Profit: Diary Entry 02
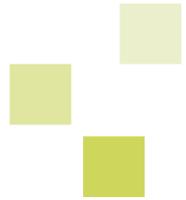
This state department brokers quality IT resources at the lowest price and best value for more than 30 state and local agencies. The director of IT was interviewed and shared that his department struggled to efficiently and accurately provide monthly detailed Bill of IT reports to the agencies. Agencies frequently disputed charges, resulting in significant departmental hours being consumed to manually investigate over 50 data sources before arriving at a resolution. Consequently, agencies lost trust in the department, and the department's employees lost confidence in IT. The department was also tasked with providing transparency that was not possible with current solutions.

The director explained that in order to drive more value for the state and further promote the use of managed technology infrastructure, the department needed to embark on a journey to transform its distributed IT organization into a single, shared-services model.

Running IT Like a Business as a Shared Services Broker

Although the department had completed its transformation to Shared Services Broker, the director stated that the department still struggled to efficiently provide clear, detailed monthly invoices to the agencies for the services they consumed. The department still spent hundreds of hours manually consolidating and calculating information from more than 50 data sources. Agencies continued to have a lack of visibility into the details of their services and charges; invoice disputes did not disappear. The department sought a solution that would allow them to realize the full value of their transformation to a shared services model by bringing efficiency and clarity to chargeback and invoicing.

Key Financial Management Requirements

Several key requirements that were identified resolved the current shortcomings:

- Superior automation platform

- Cost allocations

- Transparency to agencies via a Web-based portal

- Positive ROI

- High quality customer service and focus for rebuilding trust

- Grow employee confidence in IT

Solution

The department selected VMware's IT Financial Management Chargeback (ITFM) as its solution. With integrations to more than 50 data sources, the director stated that the department greatly benefits from ITFM's ability to automatically consolidate charges for all agencies into a single system. Bills are personalized to each agency and contain details of the specific resource units the agency consumed in the month. For added transparency, ITFM also provides role-based Web access to more than 150 customers across dozens of agencies. Each agency can drill down into its invoice and see the resource units consumed, rates used to calculate charges, and applicable overage charges, something they were never able to do in the past.

ROI

The director cited several benefits the department enjoys since implementing the ITFM solution:

- Improved chargeback speed and accuracy for more than 30 state agencies

- Significant reduction in manual effort to produce timely and accurate monthly invoices

- Elimination of invoice disputes

- Agency trust regained in the department

- Employee confidence in IT to provide business value restored

- Greater transparency to agencies

Commercial

Commercial:
Diary Entry 01
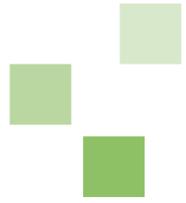
This aerospace company provides high tech and aviation products to the commercial sector and military products to the United States Department of Defense. I interviewed the enterprise architect responsible for managing global infrastructure and virtualization. Their data and applications are subject to high security and accessible exclusively by US citizens. The nature of their business generates large volumes of data as well as complex and proprietary applications which result in very large data centers.

Move to Virtualization and Cloud

The enterprise architect explained that in 2008 they began a move toward server virtualization that concluded in 2011. Saving money and consolidating infrastructure and operations was the objective of this initiative. Today almost every server is virtualized and they have started working toward deploying and managing internal clouds to improve the delivery of their secure applications and files.

"We could see immediate benefits to virtualization, not just increased server utilization but a reduction in supporting equipment like switches and firewalls."

Infrastructure Operation Requirements

With over 11,000 virtual machines operating in five physical data centers, they needed a scalable solution that would provide management, monitoring and quick issue resolution. They required a solution that would be able to monitor virtual machine (VM) performance and track changes made to the physical server hosts as well as to VM configurations. The most critical requirement was for artificial intelligence to generate alerts and notifications. With an overwhelming number of VMs, the enterprise architect stated his team can receive over a thousand threshold alerts a day which can obscure real problems. The architect sought a solution that would compare trending and normal operational swings with true deviations or performance issues and alert his team correctly.

"I would get a ton of alerts, such as when when finance would do the books, and it was normal operation to max out the servers and spin up new ones to handle peak load. But every month when that happened I would get 50 alerts that are often worthless annoyances."

Solution

The aerospace company selected VMware vCenter Operations Suite (vC Ops) to manage their large virtualized infrastructure. The company started using vCenter Operations technology in beta in 2010. While vCenter Operations Suite provides basic threshold monitoring, the enterprise architect emphatically stated that the real value is the intelligence behind the monitoring that looks for anomalies to reveal areas where problems are actually occurring.

"I didn't need or want hundreds of alarms going off every day when some threshold was crossed. That provides no value and we just ignored it. VMware vCenter Operations Suite has a learning algorithm and now we look at anomalies not just thresholds."

He also spoke of an integration that provided the ability to track changes made to servers and VMs and was correlated to the alerts from the vC Ops dashboard. Troubleshooting and resolution became easier and faster. The enterprise architect noted that vC Ops learned when metrics were truly outside of normal operating ranges so it would adapt to a changing virtualized environment. While he has received tremendous value with vC Ops, he shared that the solution dramatically improved with the recent release of version 5.0. He also noted the latest version was easy to install, configure and manage.

"We deployed the last version of vCenter Operations in just one week. It is that simple but still meets all of our requirements."

ROI

The enterprise architect stated that his company has received tremendous benefits and improvements from a more resilient platform that took less time to maintain and triage. They are:

- Cost savings

- Better use of resources

- Faster troubleshooting

- Fewer cycles managing and monitoring the virtual environment

- Improved uptime

- Few user help tickets

- The IT team is happier and not in a constant fire drill mode

Next Steps

They are continuing the move to the cloud and expect to run a hybrid cloud in the future where part of the customer load will go to the cloud and the rest to their data center.

Commercial:
Diary Entry 02
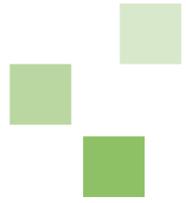
This S&P 500 multi-national company has R&D and manufacturing facilities in multiple countries with distribution and business offices in over 40 countries. As a result, IT is widely distributed around the globe. We interviewed the executive director of Global Shared Services who shared that IT is critical to supporting the company's multiple brands, thousands of retail outlets and tens of thousands of employees. Without IT, business would come to a halt. Furthermore, the company requires that its business units document how much IT they use in each country. This led the company to implement a service oriented approach.

Services, Costs, Demand – Run IT Like a Business

The executive director shared that since business units track services offered and their costs to ensure a profit, the company felt that IT should operate the same way. To effectively manage IT, the company needed to document how much IT each business unit consumed, which was impossible without defining services and costing them out. Without this vital information, business units could not deduct IT expenses. Doing it manually was too time consuming and error prone.

The company needed an IT financial management platform that handles costs and prices and supports the tracking of services each business unit consumes. Furthermore, the company required the information to be broken down by country so that tax jurisdiction could be computed.

"With well documented services and service costs, you can optimize your service portfolio and the underlying technologies needed to deliver the services in demand today and the services that will be asked for tomorrow."

Solution

The company selected VMware's IT Financial Management, which provides a complete solution for the management and automation of financial IT business processes including:

- Service cost allocation and transparency

- Plan and budget cost controls

- Actual vs. Forecast comparisons

- New project evaluating options

Business units now receive accurate, detailed and current views of their IT service usage and costs, with complete understanding of what they are getting and what it costs. Demand for a service can be managed by adjusting service costs and new technologies can be evaluated based on a business unit's ability to lower overall costs.

ROI

"Before, we had no systematic way to cost our IT services. Sure we had a service catalogue but that didn't track costs and usage. How could we document who was consuming what and for how much given the myriad of complex reporting regulations we operate in? Enter VMware's ITFM."

The executive director noted that being able to track services and related expenditures has allowed the company to produce documentation for improved visibility. He also shared these benefits:

- IT costs and usage documented world-wide

- Reporting agencies have the information they need by country

- Improved balance sheet and profitability

"Things are a lot better when you can talk specifics instead of generalities on what IT is delivering to whom."

Commercial: Diary Entry 03
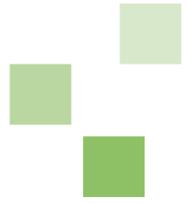
This Fortune 100 international technology company provides electronic devices to consumers and provides IT infrastructure, applications and services to enterprise and telecommunication carriers.   We spoke with three directors from the cloud operations team. This operations team is responsible for providing infrastructure for internal R&D and testing that must support their agile develop process. In addition, they provide support to the operational teams of their telecommunications customers' network system.

"We have a unique role supporting both internal users and the operations teams of our end customers."

Move to Virtualization and Cloud

The operations team shared that they run an internal private cloud to meet the rapidly changing needs of their development and testing teams. In an agile development process, a specific environment may only need to be up for a couple of hours and then it is reconfigured and repurposed for another task. The lead time for those environments is short. The operation of a cloud with a catalog of virtual machine (VM) images is highly suitable to meet the requirements of rapidly changing environments. The team also leverages their internal private network to leverage their tools and skills to provide operation and troubleshooting services and support to their end clients.

"In a development scrum, I would hear we need a new environment and the expectation is that we will be ready today or at the latest tomorrow. You need a cloud solution to provide that kind of responsiveness."

Infrastructure Operation Requirements

This team had relatively few but very important monitoring requirements to satisfy both internal and external customers:

- Monitor the VMware's VMs out of the box

- Monitor the hosts that VMs were running on without customization

- Extensibility to application monitoring

- Flexibility to monitor unique equipment

- Customizability to port monitoring information into other systems

"We needed this to work out of the box and monitor the VMs and the hosts they are on. Then we needed to be able to extend it to monitor our propriety software and operating systems as well."

Solution

The company had a rigorous evaluation process in which the team considered four products from both established monitoring companies and young technology companies. The operation team said that after their evaluation process, Hyperic from VMware was the clear winner. It satisfied all the technical requirements. Plus, past experience with VMware's other products solidified the decision. The company has deployed Hyperic across 400 hosts that are located in various locations.

"We proved that Hyperic can be extended to solve the needs to support our development process which uses a lot of Java scripting and JMX as well as meet the needs of our telecommunication customers."

"The Hyperic solution worked out of the box for the VMs and hosts they were on. We could see CPU, memory, file systems, and disk operation metrics immediately."

ROI

The operations teams shared that they can visualize the operations of the cloud infrastructure in a single dashboard as well as provide a dashboard for the telecommunication customers. This allows them to hide the complexity for daily operations but still have a drill down capability to find out why an indicator may be red. They said that this allows them resolve issues earlier which results in fewer service interruptions to their R&D team as well as telecommunications operators. These are the benefits cited:

- Better uptime and performance

- Single dashboard for system operation visualization

- Simplified maintenance with one

- tool for software and hardware

- Faster mean time to repair (MTTR)

"We are able to extend the (Hyperic) solution to look at the applications and solutions running on the VMs. I am happy to say today we are using Hyperic exclusively and offer that as part of our service to our end customers."
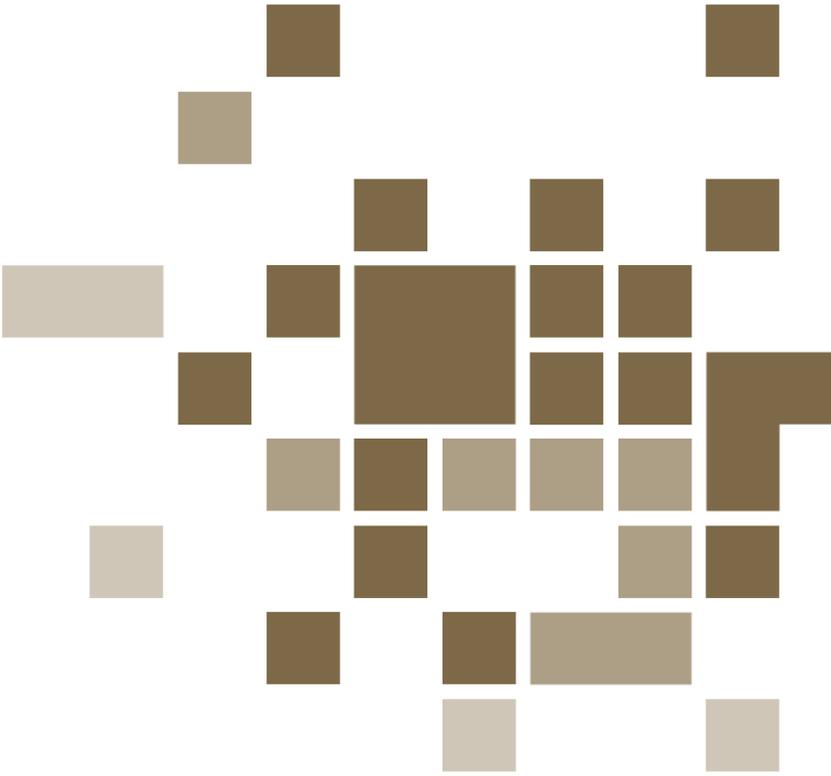
Hardware

Hardware:
Diary Entry 01

This high tech data storage products and services company has a large global presence with more than 50,000 employees in over 80 countries. We interviewed the solution architect responsible for the virtualization and automation of datacenters in the United States. He oversees the operation of five datacenters that provide solutions for employees as well as platforms for customer solutions.   Customers review this company's IT deployment model for their own benefit because the company is hailed as a leader in storage space technology and the model continually balances state-of-the-art technology with practical deployment and highly reliable operations.

Move to Virtualization and Cloud

Several years ago the solution architect implemented a "sweep the floor" initiative to aggressively move to virtualization. Today the high tech company boasts that 90% of their servers are virtualized. Now the solution architect is focused on datacenter consolidation and an increasingly sophisticated private cloud IT solution and employee self-service. The initiatives not only reduce costs but will make IT more responsive to the business. However the solution architect noted that tools and operating practices that worked on traditional static datacenters need to change to manage datacenters with virtualization and cloud operating models.
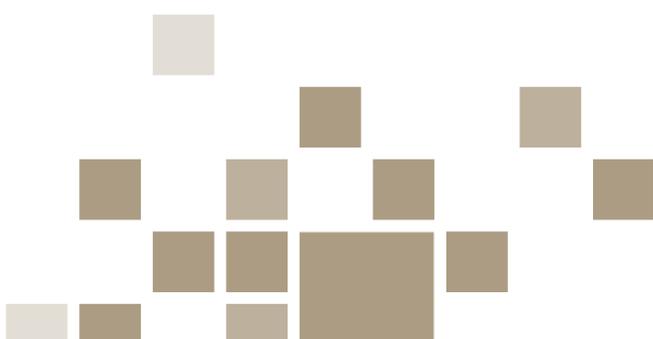
Infrastructure Operation Requirements

The solution architect noted that he was looking for a new tool, a tool that is designed to deal with a dynamic environment and that can "learn" what the appropriate thresholds should be based on historical operation. In addition, he shared the following requirements they had for virtualization monitoring:

- Self-learning tool that would report operational anomalies

- Virtual machine (VM) performance tracking

- Dashboard that could also import metrics from other sources

- Track infrastructure headroom for capacity planning

- Key hardware and VM metrics tracked, reported and stored

- Simple tool administration

- Correlated groups of applications and hardware for faster issue resolution

Solution

The solution architect discovered that only two tools had dynamic and learned behavior capabilities. However he selected VMware's vCenter Operations Suite (VCOPs) as it was more sophisticated and provided a better learning algorithm, better integration APIs with other data sources and a more powerful dashboard.
As this storage company continues its server consolidation project, they are assigning dedicated vC Ops deployments for each of the core areas: Virtual servers, virtual desktops (VDI), their ERP application infrastructure and their Microsoft Exchange environment. Their virtualization environment has over 8,000 VMs that are monitored with vC Ops.

"vCenter Operations Management Suite is very good and provided value immediately. We were just blind before."

"The fact that we can group different assets really helps the team understand what servers, switches, VMs and storage are supporting a specific application or service. And you can visualize it all in the dashboard."

ROI

"The IT team is much more efficient with vCOPs. They are not distracted by hundreds of false positive threshold alarms."

The solution architect shared these business benefits the company receives:

- Visibility into the operation and performance of their virtual environment

- Early detection of issues

- Minimized risk

- Capacity visualization

- Support root cause analysis

"The grouping in vC Ops makes it much easier to see what infrastructure, both physical and virtual, are supporting an application. That makes it easier to troubleshoot."

Next Steps

In the future, the high tech company would like to have vC Ops send alerts that create a dynamic and automated response for additional computer or storage needs.

Hardware:
Diary Entry 02
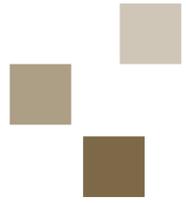
This global technology company creates and provides self-service solutions for ATM machines, point of sale systems, airline check-in systems and other integrated hardware and software solutions. We interviewed the solutions architect who is managing the infrastructure development for the next generation of airline check-in and baggage solutions. He is working directly with developers to ensure their code is deployable on virtualized and cloud based solutions. His responsibilities ultimately follow the company's own datacenter implementation to ensure it is architected to deliver seamless, scalable and reliable services to their customers.

Move to Virtualization and Cloud

The solution architect explained that over the last few years, the market has changed significantly. Just a few years ago their solutions were sold to customers for traditional on-premise datacenter deployments. Now many customers are using the cloud to support highly distributed services. As such, a customer may still use an internal private cloud but may also run a hybrid scenario. Additionally, his company is deploying both a PaaS and a SaaS solution that will allow their customers to use their infrastructure in that hybrid model or simply use it as a SaaS solution. Operating a PaaS and SaaS places a business requirement on managing their environment in a multi-tenancy model.

Application Performance Requirements

Development and QA Requirements

- Support Java code, specifically the "Spring" framework

- Support for J2EE

- Monitor Tomcat, JBoss and WebSphere

- Real-time CPU utilization

- Thread counts and utilization

- Stack traces

- Method calls and paths

Production and Operations Requirements

- Monitoring group according to multi-tenancy

- Global VM performance dashboard as well by multi-tenancy group

- CPU, disk, storage and memory usage monitors

- Threshold alerting

- Data logging and reporting

Solution

The solution architect reviewed many existing production and developer products but did not find one product to satisfy the entire list of requirements. Then he heard about the vFabric Application Performance Manager beta and signed on to evaluate it. He was impressed with the capabilities and directions of the product and has deployed it on his R&D environment for use by the development and QA teams today. They are looking forward to leveraging the multi-tenancy aspect of the solution once in production. That will be critical to support their PaaS and SaaS customers.

ROI

The architect shared that once they got over the initial challenge of getting developers to use new tools, he has seen the following benefits:

- Developers code more effectively by using the solution like a profiler

- Reduced bug resolution time

- Code is more efficient for the virtual environment

- More effective QA that in addition to code verification, evaluates overall performance and reliability

"We are getting a lot of value out of Application Performance Manager today with developer use. We expect even more value when deployed in a more classic use model in the production environment."

The architect was very enthusiastic about the future deployment of vFabric Application Performance Manager on their production environment that will support the company's PaaS and SaaS solutions. He said he anticipates the following benefits:

- Proactive approach to prevent customers from seeing issues Full visibility into infrastructure, application and virtual environment

- Quick resolution with teams using the same tool and information

- Minimized risk of operations

- More efficient operation and deployments

- Support and report on service level agreements

Next Steps

The technology company expects deployment on the production environment later this year and customer use in just a couple of months following that.

VMware Cloud Management Launch at VMworld Barcelona 2012

In this world of multiple platforms and multiple clouds, the reality facing IT today is that a new approach to management is needed. One that's as flexible and dynamic as today's highly virtualized and cloud environments.

VMware's management solutions are designed to meet the demands of cloud computing – self-service, scale, velocity of change, shared infrastructures – as well as the modern applications they support. VMware Cloud Management is an integral part of our Software Defined Datacenter vision and our new VMware vCloud Suite. The new capabilities we're announcing at Barcelona further simplify and automate IT management while addressing key challenges around cloud service provisioning, cloud operations management and cloud business management.

Learn more about the VMware Cloud Management Launch at
VMware NOW!

Download an FREE evaluation copy of:
VMware vCenter Operations Manager
VMware vCenter Chargeback

VMware vFabric Application Performance Manager

Follow the launch on Twitter:
@VMware

vmware®