

Data Center Optimization for Energy Efficiency

Speakers: **Rick Skanron - Channel Development Manager for the IBM Tivoli's Green Data Center solutions**

Carla Krell - GB Program Manager for IT Optimization and Green IT

Carla:

Welcome to this IBM podcast titled Data Center Optimization for Energy Efficiency. This podcast discusses how Data Center optimization can affect energy efficiency and help control energy costs. My name is Carla Krell and I am the program manager for Green IT and ITO in the Americas. I would like to introduce our speaker Rick Skanron. Rick is the Channel Development Manager for the IBM Tivoli's Green Data Center solutions. Prior to this assignment Rick has led various initiatives for IBM Tivoli Channel Development and IBM WebSphere Worldwide Sales. Rick came to IBM in 1997 with extensive sales and technical sales experience in wireless data communications, telecommunications test equipment, computer hardware and software and automated test equipment.

So let's go ahead and get started.

Welcome Rick.

Rick:

Thanks Carla.

Carla:

Rick our first question here is the term data center optimization is used so much you can have a different definition to different organizations. Can you help us understand for your perspective what a data center optimization is and where IBM can help clients?

Rick:

Sure Carla. Data center optimization is the efficient utilization of all data center resources. I'm talking about CPU, memory, disk, power, cooling etc. Often we hear the term data center optimization and we think about techniques like virtualization and consolidation of things like applications and data. There is a lot more to a data center than servers and disk drives and that's where we can start to have an impact on energy efficiency.

Carla:

With that being said can you talk specifically about how data center optimization can help control energy costs?

Rick:

Absolutely. If we take into account things like power supplies and UPSs, power distribution cooling and other environmental assets, we find that over half of the power that goes into a data center is spent on running these infrastructure assets that support the IT. As the planet has gotten smarter, so have these data center and facility infrastructure devices and networks so we can take advantage of that. If we apply optimization disciplines like virtualization, consolidation, load balance and dynamic resource allocation, all that stuff. If we apply those techniques to data center and facilities infrastructure assets along with the IT assets, we bring that into a service management context from an IT perspective and now we can start driving some serious energy efficiencies.

Carla:

Can you talk more about how Tivoli is actually able to derive greater energy efficiency?

Rick:

Carla first you can't manage what you can't monitor. So we start by giving our customers a view from one single pane of glass for all their energy consumption across all of their IT, facilities and data center infrastructure. We store all this information so our customers perform trending analysis and they can see just when and where all this energy is being spent and on what applications and devices etc. This allows our customers to identify things like underutilized assets like servers are used servers and shut them down. It allows them to identify standard computing and standard power capacity. We bring into the view things like UPS alarms, temperature and humidity sensors within the server racks and in hot isles and cold isles. We also bring in events from building infrastructure like air conditioning dampers and so forth.

You just can't turn up the thermostat and turn off all the power in the data center and say great, we are saving energy and we are energy efficient. You need to put that in the context of what IT is therefore and that's to deliver services. Tivoli puts energy efficiency in the context of IT service management. You got a balance both things. We give you the tools to correlate all of this data to service management metrics, things like application response times and how are my business services performing and what are the quality of the services that I'm giving to my end customer? Now with all these energy metrics available to us we can start capping server power without violating service-level agreements. We can start shutting down unutilized servers and start moving applications from underutilized servers and so forth without violating SOAs.

In addition to that what we can do Carla as we can now take power and cooling in building infrastructure events, things like low UPS batteries or air conditioning damper failures or crack unit failures and we can determine it really quickly how that's going to affect business services. We can then prioritize and take corrective action on these events before they impact our ability to deliver critical business services. In short we give our customers the ability to detect and respond to a lot of different infrastructure and data center facility events and trends without sacrificing critical business service performance.

Carla:

Rick, that makes a lot of sense. You just talked a lot about the benefits of the Tivoli software to help manage energy across the IT, the data center and the facilities infrastructure. Can you now talk about how a client can just get started?

Rick:

Sure, it doesn't do us much good unless we can actually start driving some efficiency where it results in cost savings. The first thing we do like I said before was to give you a view of what's happening and to visualize everything. So by doing things like simply monitoring and measuring our energy usage, our thermal profiles and all the energy metrics, we start realizing right off the bat 5 to 10% savings just by knowing what's going on. We start eliminating existing inefficiencies and start taking some action. Turning off the servers that aren't doing anything other than eating up power and identify things like an efficient storage management and underutilized assets and doing virtualization and consolidation in that aspect. Now are talking about driving more and more energy efficiency.

We start doing things like controlling the servers, the power consumption of servers by throttling back the power cap and doing things like minimizing thermal hotspots within the data center because now we can measure them and distribute the load. Now we're talking about upwards of 40% of energy savings that are possible and we can go beyond that. We can go beyond that with doing things like dynamic energy management, moving workloads around dynamically in response to energy events and thermal events and so forth. So we really can get going and everything that you do at the beginning to monitor your energy usage all fully apply throughout the cycle.

Carla:

So Rick in closing can you review some of the reasons that the Tivoli Green Data Center solution is unique in the industry?

Rick:

Sure Carla, I don't want to sound like a broken record but the Tivoli solutions puts energy management into a service management contexts. It does this by bringing together data about events and performance of all sorts of assets from the IT side, from the data center infrastructure assets side and from the building infrastructure assets side. We combine all those together by partnering with companies that provide these intelligence infrastructure assets for the data center and facilities. The best-of-breed of those companies we partner with them to make sure that we are getting and bringing into the IT realm all the necessary metrics and events that are needed in order to make intelligent decisions and to really reduce energy usage without sacrificing IT service level performance.

Carla:

Well thank you for your time today Rick. I would like your listeners to know that you are able to view more material and resources on the data center topic at www.ibm.com/systems/greendatacenter. We hope that you found this session useful and we also encourage you to listen to other podcasts available on IBM.com.

Thank you again for listening.