

# Is Multi-Hypervisor Cost a Myth?

There are lots of exciting things happening in the technology industry. While multi-hypervisor strategies are not pervasive today, I see more and more production environments which are looking to leverage more than one hypervisor.

This raises the question of “is running more than one hypervisor too costly?”

If you are a hypervisor vendor, your obvious answer to this is yes, but let’s stop for a moment and consider the real detail around what defines the “cost” of running a hypervisor, thus the potential increase in cost to run more than one.

I checked the signs of the apocalypse and there wasn’t anything about hypervisors in there:



As a consumer of many hypervisors (Xen, KVM, vSphere, Azure, Hyper-V, and I also count Docker and LXC technically), I hope that it will reduce the risk of someone yelling FUD MONGER!! I can tell you with full certainty that this is a FUD-free post, and my opinions stem from years (far more than I may like to admit) of running production data centers and cloud platforms. I love all my hypervisors equally, and for different reasons ☐

With that, here are some thoughts around operational products and processes that will affect both tangible and intangible costs of operating your IT organization.

## **Backup**

Does your backup product work across multiple platforms? Does it cost more to do so? Most likely, there will be a parity in cost to enable backup of a new guest in a new host. They are either agent-based backups which will grow as you do already, or perhaps they are host-based. Remember, that running multiple hypervisors doesn’t mean running twice as many underlying applications. You may see some duplication of workloads during transition into embracing new hypervisors, but the overlap is minimal.

In my opinion, a key reason to add another hypervisor is to create a scale-out application platform which lends itself to not need traditional node-by-node backups already. Stateless applications change the game already, so it’s not a 1:1 as you grow those environments.

## **Orchestration**

Are you all-in with one orchestration platform that solely supports one hypervisor? Well, that could obviously be a challenge to think that bringing on new underlying hypervisor tools could create some cost of time and potential capital costs also. That said, take a look at your orchestration tool and I would bet that they are doing everything they can to be able to “orchestrate any workload”, right?

If the same people who are telling you that they have best-of-breed integration with their own hypervisor because they want to reduce costs for you, the reality is that they are selling you “stickiness”. By creating tight integration with a single platform, it makes that a sticky environment which ensures future re-up of licensing and support.

If you go outside of the big 2 (VMware and Microsoft) as platform behemoths, you also see the same thing in cloud. Obviously AWS configuration management tools are geared towards operating your AWS environment.

Take a look at the rest of the configuration management and orchestration tools and you will see something quite different. Just looking at CAPS (Chef, Ansible, Puppet, Salt) you see already that they are building towards being the multi-platform capable tool you need. When Microsoft Windows enables native OpenSSH in the platform, the agentless remote management capabilities open up quite a bit. How cool is that?

## **Conversion of Virtual Machines**

This is called lifecycle management if you ask me. Most companies won't be looking to do a massive and sudden conversion from one hypervisor to another. They will run parallel environments and bring new workloads into the platform that makes the most sense. If you do choose to do a mass re-platforming of your production environment, that will be costly both from a capital and operational expense.

## **Cost of Ownership**

Licensing is a capital and operational cost. Free hypervisors are like free kittens, because they may be free to start, but you have to keep feeding them. If you embrace open source alternatives to commercial hypervisors, you will probably engage with a partner or vendor to assist you.

In my mind, I consider this a wash. There are costs on either side, and I've been saying for a long time that VMware should make their hypervisor free (no, not the one that is already free, but the real full version) because they make money off of management tools. There is a reason that they stopped supporting ESXi under OpenStack because it created the ability to use VMware without paying for it and leveraging OpenStack projects for other capabilities. There was nothing innocent about that support and development effort going away. That's their choice, and why stop charging for something that tens of thousands of people are paying for?

## **Staffing**

As a long-time architect and administrator of multi-hypervisor solutions in production and development environments, I actually find it rather offensive that vendors tell me that the learning curve is too steep to operate with confidence on more than one hypervisor. Let's hope they don't talk like that to their kids when they are coaching them through choosing a career path.

Trust me, I put OpenStack into an environment when nobody else on the team had comfort running linux. Guess what happens when you do that? They see the results and then will choose to staff up or train existing staff to bring the new skills in house. Do we really think that we are so locked in to a single product that we can't evolve our skills at all? And how do they think that we learned their platform to begin with? The reality is that we have already made the shift into and out of other platforms, so please stop with using this as the reason why we can't move.

Will it cost to do so? Yes. Will the benefit outweigh the costs? In my opinion, absolutely yes. By enabling your staff to operate and grow your IT platforms in a way that drives your business organization to be the best at what they do, then how can you say that it is "wrong" to bring a new hypervisor or development platform on board.

## **Why I Think Multi-Hypervisor is a Reality, and is Good**

A year or so ago, the conversation around running multiple hypervisors would be one that ended in “there is no good reason to do so because of the difficulty in managing multiple platforms”. We have seen a lot happen in that time that has minimized the truth to that statement.

If you are experimenting with cloud platforms, you are already running multiple hypervisors. I actually had someone say that they didn’t think Xen was workable as a production platform, but they also run multiple applications in Amazon. It was quite joyful to let them know that Xen was powering their applications without them realizing it.

Hypervisors are effectively free, although VMware does cost more than other alternatives. Management of those hypervisors is generally not free, but in many cases can be zero capital cost or close to zero.

If you are migrating between clouds or on-premises platforms, there are tools that achieve this for you. Microsoft has their tool (obviously to migrate inwards), VMware has their tool (obviously to migrate inwards), Amazon has their tool (obviously to migrate inwards), along with other multi-hypervisor friendly tools such as Double-Take by Vision Solutions that can port machines between hypervisors. There are others, but I can speak to these four examples because I have directly experienced how they work. They work great. Almost surprisingly so, but lets face it, these have evolved over years and have been tested well across the years with more consistency and success as hypervisor vendors made inward migration simpler.

### **Why Run Multi-Hypervisor Environments?**

Easy answer in my opinion, which is to enable the best-of-breed platform for your business to run on. If you are experimenting with scale-out application architectures, why wouldn’t you explore doing so on a platform that provides that capability with less cost. Running alternative hypervisors to align with the requirements of your workload.

We no longer switch entirely from vendor to vendor when we add products to the IT portfolio. You probably run more than one orchestration tool today. You probably run more than one development platform today.

If anything, consider what it means to your business to be more agile for you customer. Plus, think of that as you go through your week. You probably shop at more than one chain of stores, and stay at more than one chain of hotels, and you’ve probably owned more than one brand of car. All of those decisions are for one simple reason: choose the best solution for the best result. There are many results we seek, and many solutions that provide them.

The one-stop shop hypervisor is a myth. That’s why we laugh every time you hear “single pane of glass”, because we all acknowledge that best tool of best job is what we really need. Let’s just cool down the fear campaigns that you have chosen your hypervisor once, and you’re not allowed or supposed to look elsewhere. In ten years, you’ll look back and laugh at what you are doing in production today, the same way we look back at physical servers as the “best and only solution” which was how they were sold to us back then too.

Comments are welcome, and I’m sure they could get interesting ☐

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# How Bon Jovi Taught Me How to Adapt to the Cloud

When we talk about the shift towards cloud architecture, there are many folks who get worried about what we are saying. One thing to note as we have these discussions is that the shift towards cloud has been happening for some time, and will continue to happen. It isn't an overnight thing, so you shouldn't imagine that you have to make an overnight change to adapt. However, let's take a look at some life lessons I've learned along the way.

## **Bon Jovi Taught Me How to Adapt**

Everyone has had to endure some kind of change as we have gone through life. Some adapt better than others, and some honestly don't have to depending on a number of factors. We all know someone who's dad still has a hairstyle like Elvis, and hasn't needed to change because they aren't faced with a requirement to do so.

Let's take a look at a great example of how adaptation happens gradually over a career. Our example here is New Jersey band, Bon Jovi. Once a part of the massive hair band revolution that took place in the 1980s, they looked the part and fit in well with what was happening at the time.



We almost want to make fun of it when we see it now, but remember that at the time that they were rising to popularity and moving from clubs to arenas, this was what everybody looked like. And in case you didn't believe it, take a look at this:



That's right, they looked just like everybody else.

## **Why Bon Jovi Chose a Different Path**

Bon Jovi did something that we as systems administrators and systems architects need to do. They saw the writing on the wall and they began to adapt their style with a longer term plan to succeed. It isn't that they abandoned what they were doing, but they faced some adversity over their lack of alignment with the heavier sounding competitors that were living like every year would be 1986.

So as I made a choice not too long ago to dive head first into areas of technology where I was not working with on a daily basis, I had some of what Bon Jovi taught me in mind. For quite some time I had a sort of a dichotomy happening because I was doing significant learning on platforms that I wasn't getting to use every day. Now many ask why I would do this? Here's why.

## **Bridging the Gap**

In cycling, we have something that happens regularly. The larger group known as the peloton, rides in a large pack, and at some point a small group of riders make the jump to become what is called an escape group. This group will work extra hard for a short while to make a gap between themselves and the peloton, and then they hope to gradually increase, or maintain that lead.

One of the talents I've learned is that even when you can't make the lead group, you can also make a well timed decision to go solo and bridge the gap. That means that you, and you alone make an incredible effort to ride out of the peloton and latch onto the escape group. This means that you may use massive energy to get there and you may not be the overall winner, but you have the opportunity to be with a group that leads the peloton right to the end of the race.

This is something I do in my every day efforts. I research relentlessly. I try things out that I have limited time to work with. I have a Kanban board that has a backlog that would make most people weep, but I have the same WIP (Work in Progress) limits that anyone else does. The difference is that I choose short sprints to do my work, and I make sure that the things that I am working on are directional and advancing my value as a person, and as an IT resource.

## **Bon Jovi Bridged the Gap**

So here we are many years later, and we can make the references to bands like Bon Jovi because you probably know many songs they've done. In fact, you may know songs that they have done in the last few years. Yes, the same band who was touring arenas in 1986 is still doing the same thing today. If you look at how long they were around, they were actually doing bar gigs and small clubs as far back as 1983.



As you can see by the picture, these are the same people who were there before, but they just have some more age changes, and they have changed their style in small ways to adapt to the changing music ecosystem around them. All those bands who made fun of them for being "mainstream" and for not staying with their single-minded methods of delivering the same musical formula over and over, well, those bands are gone. Some are coming back because they are considered "retro" now, but Bon Jovi have had thriving careers all the way through.

## **Bon Jovi Taught Me the Cloud is Important**

I saw the writing on the wall. Among many people I was getting exposed to I saw Cody Bunch was talking about OpenStack, Nick Weaver was creating vCHS with a team of outliers who were making a path forward where none had been marked. I was witnessing the escape group. But these same people who were escaping the peloton, they were a part of the peloton for many years.

So as former systems administrators, how did these outliers make the choice to take the lead? They were the early adopters. Scott Lowe was telling me about VXLAN and stretched clustering which everyone thought was a hobby. That same crowd that didn't see it as a "current" requirement, didn't see the future need. I saw that this meant something



This means something...

I was surrounded by the same rock stars of the IT industry who were a part of the crowd just like you and I. This was one of the many "Aha!" moments I had that told me that I needed to prepare.

## **This Journey Has Just Begun**

We are always moving. Our environment is always adapting. Slowly, but surely, we are seeing the shift. It is a tectonic shift that is slow and gradual, but every once in a while it causes a massive disruption. I hope that I can help to give people the inspiration to have that "Aha!" moment that leads them to the next step in their learning path and the next step in their career.