Like Tupperware, Think About Storage When You Move To The Cloud

by Timothy Prickett Morgan

It would be hard to find a company that knows more about storage than Tupperware Brands, which has a globe-spanning \$1.6 billion business that designs and manufactures myriad containers to store food and beverages and has famously sold them through Tupperware parties for the past 75 years.

For the past several decades, Tupperware operations in Europe, the Middle East, and Africa have run their manufacturing and back-office operations on IBM's AS/400 (now known as Power) systems and their progeny, just like countless other manufacturers and distributors have done around the world. The choice of the AS/400 was driven by a desire to use applications from JD Edwards (now owned by Oracle), which are still in use.

All of the different countries where Tupperware EMEA had operations were consolidated into an on-premise datacenter hosted mainly on IBM power machine located in its headquarters in western Switzerland, with a total of ten logical partitions covering development, test, and production environments, including various JD Edwards instances.

Tupperware EMEA started to move its Windows Server and Linux applications to the cloud back in 2016, led by Stephen Moossajee, who has worked his way up through the ranks at the company starting at the help desk doing systems administrations to become a global senior manager and head of EMEA technical services at Tupperware Brands. But back then, in 2016, as we all know, the IBM Cloud did not yet have Power Systems and IBM i instances ready for prime time, and other hosting companies were not really offering cloud services as we know them today, with metered pricing and large amounts of capacity at their disposal.

But in late 2020, when Tupperware EMEA decided to move its headquarters to the city of Lucerne – to regroup its different entities– the company's managers also started considering options for its datacenter.

"Here in EMEA, we were quite advanced in that we had already moved most of our Windows Server and Linux applications into public clouds," explains Stephen. "The IBM i applications were the last thing kept on premises and we were thinking about our options. Should we rent some space in a co-location facility and move our system there? This did not really fit our requirements because moving an IBM i machine across country borders is very complicated in terms of IBM support and licensing and value added taxes and such. We talked to IBM, and they said we should take another look at their cloud, specifically the Power Virtual Server cloud. And so, we did."



Stephen Moossajee, EMEA head of infrastructure and support and global senior manager, Tupperware EMEA

IBM's Power Virtual Server cloud instances were a true cloud, letting customers dial capacity up and down, and an option for all Tupperware EMEA's applications. And, says Stephen, the IBM Cloud region in Frankfurt, Germany was close enough to all its EMEA manufacturing and distribution sites that latency was not going to be an issue.

"We did the comparisons, and I summed it up on the financial side for Tupperware Brands leaders because that is what they primarily look at – they leave it to us to handle the technical side, and they really look at the service, reliability, performance and the cost benefits," says

"...it could take up to eight hours to restore that 1 KB object to your system versus 30 minutes with VTL. VTL gives you stability, performance, usability, central management, consumption pricing, and option for DR."

> Joerg Thomann IBM Cloud Architect, IBM

Stephen. "We change our system every three years, and as it turned out, the return on investment from the move to the IBM Cloud was three years. Because we are in the middle of such big application transformations, we keep adding more CPU, we keep adding more memory, and at some point, it is costing more to keep the IBM i on premises than it is to be flexible and use the Power VS cloud. And that is why we moved our JD Edwards applications to the cloud."

As it turns out, Tupperware Brands had two logical partitions running on an IBM i machine in South Africa, too, and this pair of LPARs was moved to the IBM Cloud in the Frankfurt region along with the ten LPARs off the machine in Switzerland. Starting in March 2021, it

took more than a year to move these dozen partitions to the IBM Cloud – a month to two months per partition – and this was done concurrently while Tupperware EMEA was running its operations.

This is a lot trickier than it sounds, but the good news is that the move by Tupperware EMEA caused IBM to rethink how it was moving IBM i data to the cloud and – importantly – how that data would be archived and protected once production systems were running on the Power VS cloud service.

And it is not just the production data that needs to move to the cloud. Archives of production data have to be moved to the cloud, too, to make them accessible, and it was not precisely obvious how to do that when Tupperware EMEA started its move. With over 500 tapes of monthly and annual backups archived, all needing to be secure and available, this was going to be a big job, indeed.

At the time, the way to do this was to take IBM's Backup Media and Recovery Services (BRMS) tool for the IBM i platform and pair it with IBM's Cloud Storage Solutions for i (which has the product number 5733-ICC and therefor people often just call ICC). This allows backups of source partitions to be moved to virtual images and then transferred to cloud object storage. Then on the other end, inside the IBM Cloud in Frankfurt, IBM could restore from the cloud backup onto a Power VS partition running IBM i.

The trouble is, says Joerg Thomann, a cloud architect with IBM Cloud who works on the Tupperware EMEA account, the combination of BRMS and ICC can't handle big LPARs.

"The BRMS backup with ICC works fine for small LPARs," says Joerg. "It is reliable and has good enough performance. But for anything past 2 TB, it doesn't work well." Joerg and Stephen persisted and made it work because they had to, with partitions ranging in size between 1 TB and 5 TB. But having been through that experience, this is where the idea of using a virtual tape library instead of the BRMS plus ICC combo came into being – which resulted in a partnership between FalconStor Software and IBM, which we talked about in detail back in August, where the former's StorSafe VTL is the preferred means of backing up data for IBM i instances on the Power VS cloud and can also be used to move data from on premises equipment so it can be restored quickly as a move to the Power VS cloud.

Tupperware EMEA was the proof-of-concept customer for the FalconStor VTL backup service, which is available on the IBM Cloud with a few mouse clicks and comes with cloud-style usage billing in 1 TB increments. Tupperware EMEA is running its LPARs on a Power S922 server, and the StorSafe VTL is consuming two cores and 64 GB of main memory – that's it.

The StorSafe VTL has another big benefit aside from being able to handle large system images, thanks in large part to its de-duplication and compression features. It can restore data a lot faster, too.

"With the BRMS-ICC setup, you have to bring the whole backup from Cloud Object Storage over to a local disk, even if you only need to restore a 1KB file, which means you need that much space in local disk," explains Joerg. "That means it could take up to eight hours to restore that 1 KB object to your system versus 30 minutes with VTL. This is why BRMS plus ICC is only good for small LPARs and for test and development environments, because you can't meet RPOs and RTOs. VTL, on the other hand, gives you stability, performance, usability, central management, consumption pricing, and option for DR."

"If you need to save fast or restore fast, you need VTL," added Stephen.

Incidentally, if you want to have VTL backups from the Power VS cloud managed and monitored by someone else, the Kyndryl services spinoff from IBM offers such a service, and in fact, Tupperware EMEA is using it because one of the goals of the IBM i move to the cloud was to have engineers do less system administration and maintenance and more application engineering. "If you need to save fast or restore fast, you need VTL."

Stephen Mossajee

"We want to use our internal resources more efficiently," says Stephen. "So instead of having an engineer doing all of these day-to-day tasks, we want them to do more engineering work, more design and architecture work. Both the move to PowerVS and the use of VTL helped us achieve that."

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