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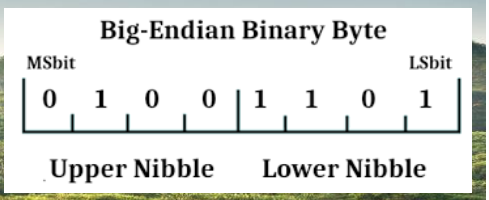
STORAGE RANGERS

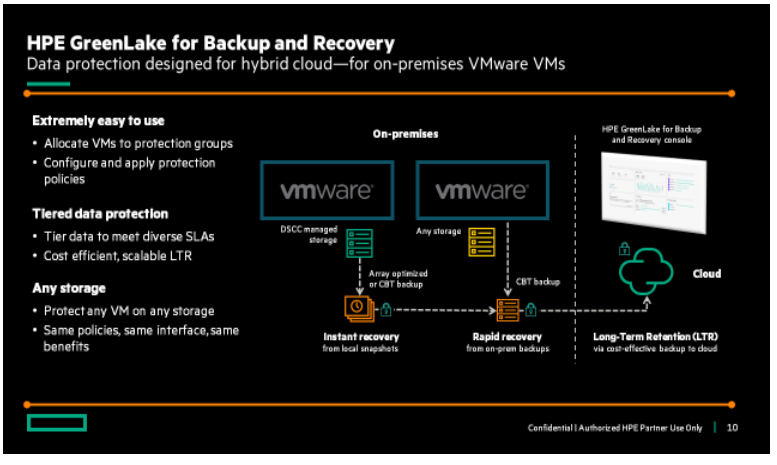


HPE Storage Nibbles* with Mauro (upper) and Chuck (lower): January, 2023

Welcome back to Storage Nibbles with Mauro and Chuck and Happy New Year! In this installment of Nibbles we are going to take a deeper look into the new PaaS now available from HPE using the classic who, what, when, where, why and how style. Introducing HPE's Greenlake for Backup and Recovery.

First, **The Who** (minus any guitar smashing antics): HPE's backup and recovery service is offered strictly as a service in a software only model consumed through HPE GreenLake's DSCC (Data Services Cloud Console). The project is purely organic leveraging in-house Intellectual Property (Catalyst, for example) in a continuous integration / continuous delivery model. HPE offers these services in a consumption-based model. Meaning, the costs of data protection is spread into future quarters, reducing the upfront cost necessary to protect the application environment and helping to accelerate digital initiatives. Charging based on usage which also helps simplify the planning process and the burden on IT personnel. For further simplicity, HPE offers multiple service-level agreement (SLA) and cost options.

The What: HPE GreenLake for Backup and Recovery. It is a backup as a service designed for hybrid cloud environments providing a cloud experience wherever your data lives. This service is engineered as a cloud native service delivered through the Data Services Cloud Console. The B&R Service fits hand in glove with VMware workloads on HPE Alletra arrays. In addition to the native integration with Alletra arrays B&R Service will also protect VMware VM's on other storage using VMware's change block tracking mechanism. But wait there's more. With December's release you can now protect your AWS EC2 instances and EBS volumes using the B&R service. Note this is limited to USA regions initially



#AllInOnePlace, #SinglePointofAdministration, #BetterProtection, #itKeepsGettingBetterAndBetter.

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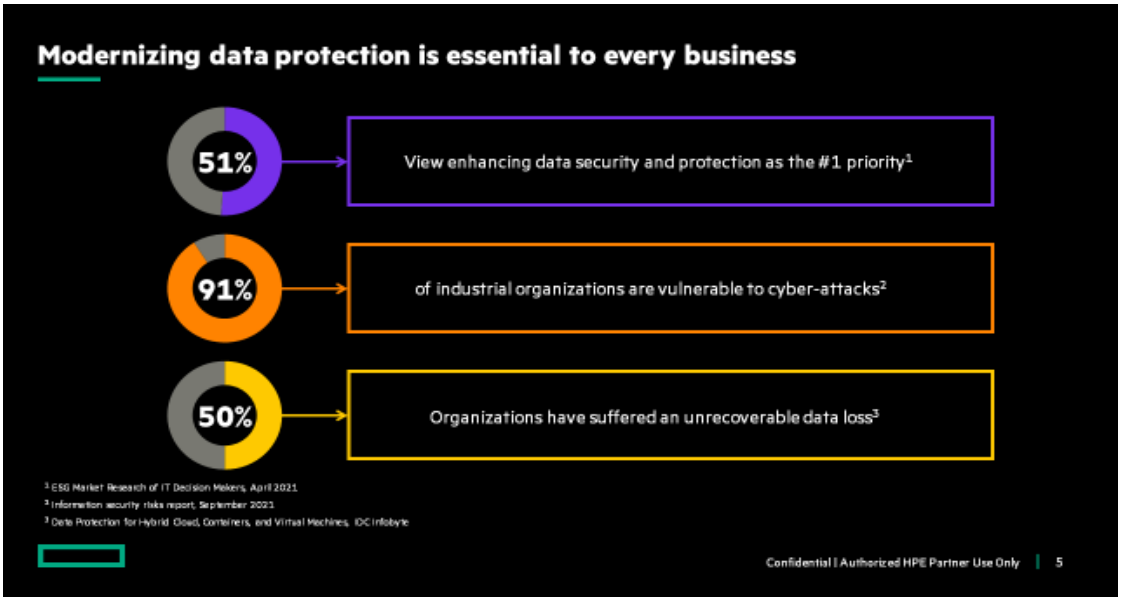
The Why: Our CEO / Grand Poohbah / Big Kahuna, You know, The Big Guy, Antonio Neri said "Data is the new currency that powers the digital economy. Data is now our most valuable asset, and I predict that one day it will be recorded on balance sheets". Wow that's something we need to pay attention to! In fact, according to a recent ESG research study (Report included for your viewing pleasure in the resources section) over 50% of organizations view enhancing data security and protection as the #1 priority. In addition, 57% of organizations expect to increase spending on data protection in 2022.



The bottom line here is, Modernizing data protection is essential to reducing the risk to organizations' data, applications, and business operations. Successful modernization, however, requires more than simply allocating more budget. Essential aspects of a modern data protection strategy must include:

• Ease of Scale, Simplicity, Single point of Administration, Elastic Resources, Global catalog and index, increasing compliance and consistent protection policies.

Now for the fun part, **The How**: First a word from Safety Sam, "SECURITY". When we discuss security in backup and recovery these thoughts need to be going through your

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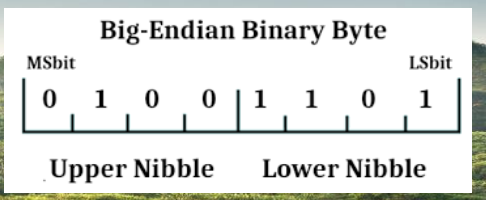
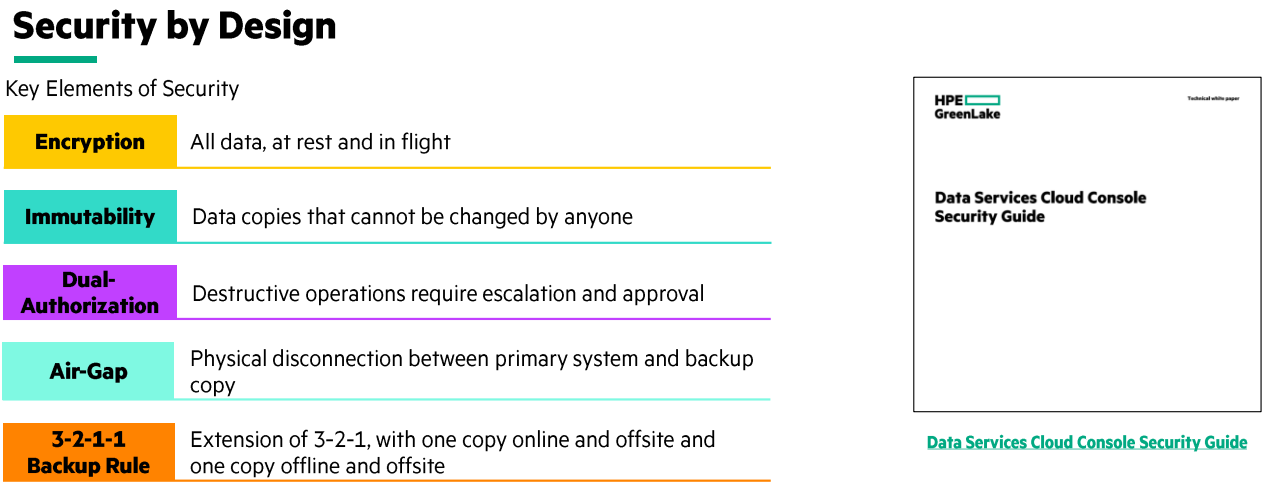


head… Encryption, Immutability, Dual- Auth, Air-Gap and 3-2-1-1 which basically will set your hair on fire



Rest easy my friend, security was a day one consideration in the design in HPE's B&R Service. Check out the security guide in the references section. HPE Greenlake for backup and recovery has all the boxes checked.

There are two backup types for the protection of on-premises virtual machines

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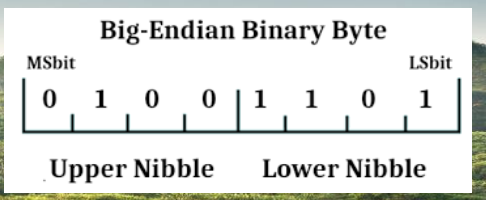

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- Array Optimized backups for VMware virtual machines running on HPE DSCC managed storage
    - For virtual machines running on HPE Alletra, HPE Primera and HPE Nimble storage managed through DSCC (HPE Alletra 9000, HPE Alletra 6000, HPE Alletra 6000 dHCI, HPE Primera, HPE Nimble G5 , HPE Nimble G5 dHCI)
    - Built on tight integration between HPE GreenLake for Backup and Recovery and supported storage arrays
    - Low impact on production virtual machines
    - Requires iSCSI connectivity between PSG and storage system(s) with FC being considered for future releases
- VMware CBT backups for all VMware virtual machines
    - No dependency on storage type used for virtual machines including HPE SimpliVity HCI.
    - Uses vSphere Storage APIs for data protection (VADP)
    - Higher host impact than array optimized backups and longer backup times
    - Uses Network Block Device via Secure Socket Layer (NBDSSL) transport mode
- AWS EC2 and EBS volumes * Note this is limited to USA regions initially but will be extended to other regions in the near term.

  Setup for cloud native backups for AWS: Simply download an AWS Cloud Formation template that has been pre-defined by HPE. Once downloaded, apply that template to create an AWS Cloud Formation Stack with your credentials. Lastly the AWS account is validated within the Backup and Recovery Service console. At this point all EC2 instances and EBS volumes will show up within the HPE Backup and Recovery Inventory. A setup wizard will guide you through the install process for both.

Once configured, the following are the general steps to backup your on-premises or cloud assets.

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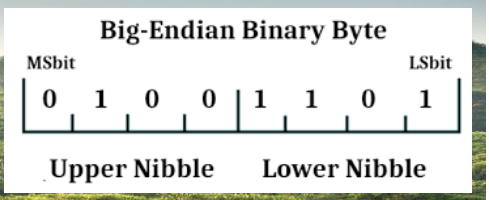
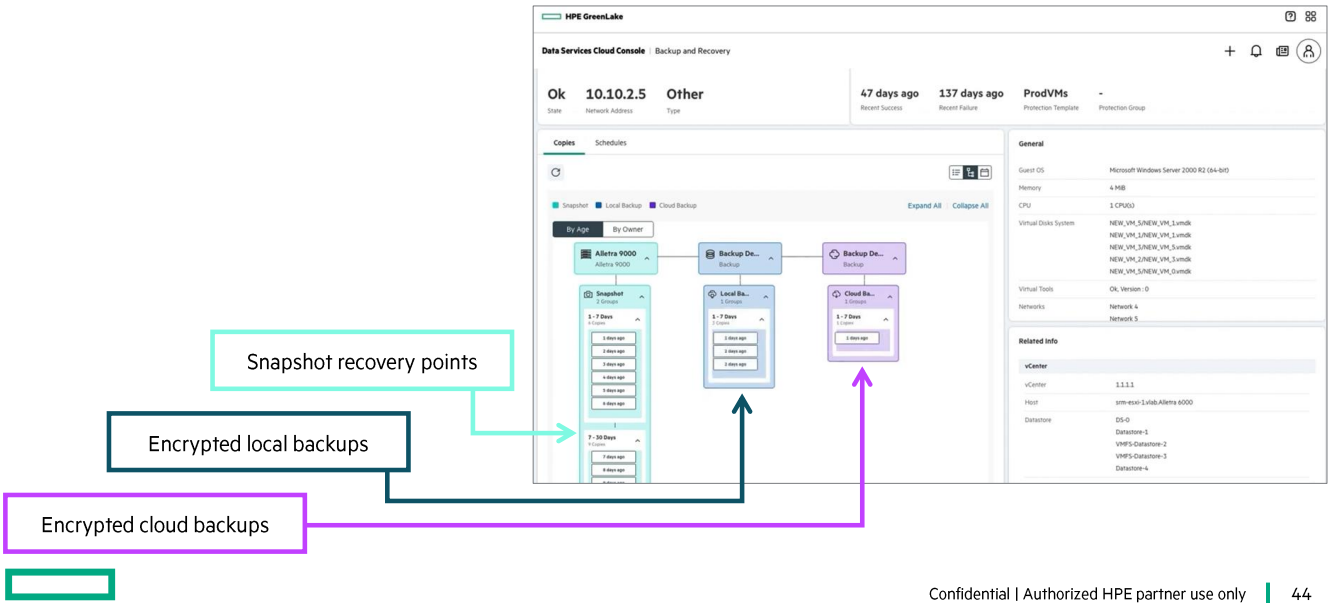


- Create a Global Protection Policy
- Apply the Global Protection Policy to one or multiple assets via a Protection Group
- Initiate a backup for the Protection Group or individual asset

Recovery points can exist as snapshots, local backups and cloud backups. These recovery points are easily viewed in the Backup and Recovery Service cloud console. Once a recovery point is selected, the action to recovery the virtual machine can be selected. This will open the recovery workflow dialogue. Currently the recovery granularity is an entire virtual machine.

Selecting the Recovery Point



The all in one slide view of HPE Greenlake Backup and Recovery architecture

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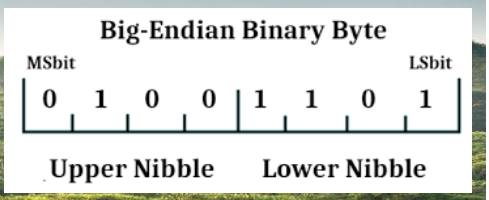

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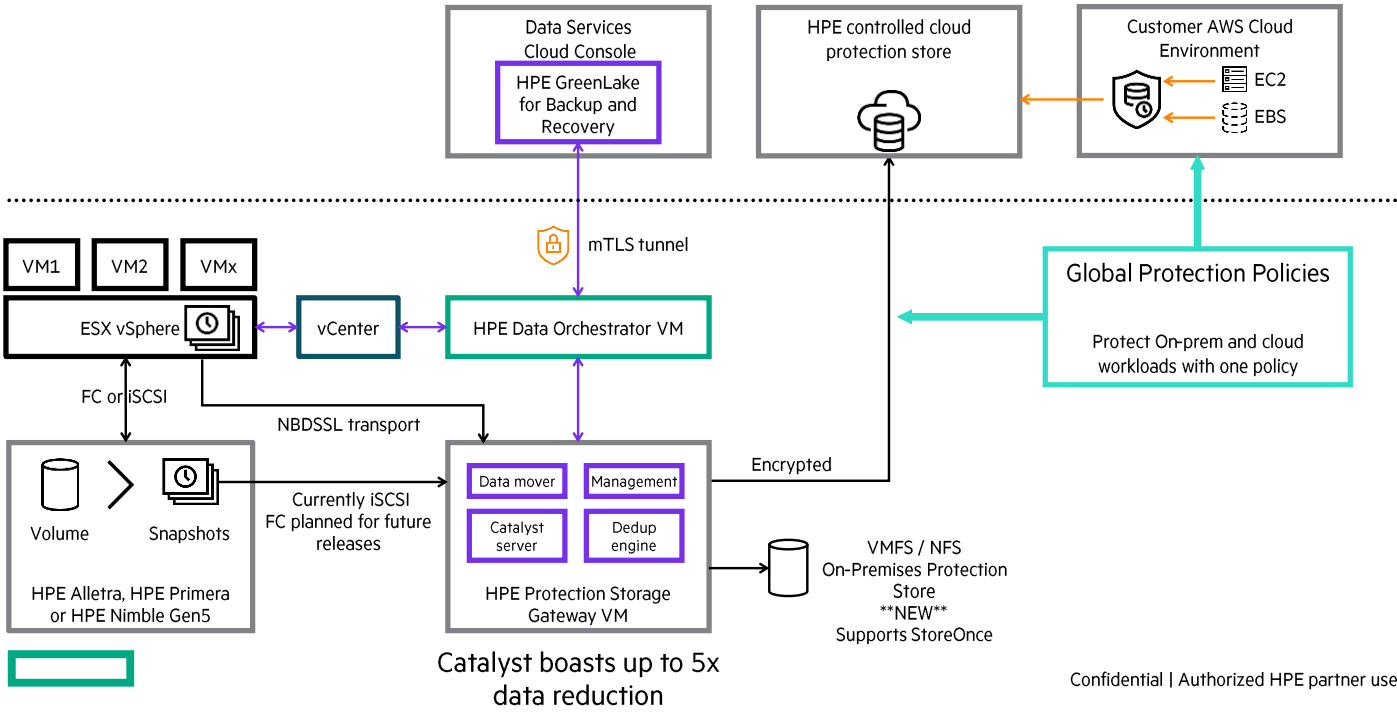
HPE GreenLake for Backup and Recovery Architecture

On-Prem VMware and Cloud AWS backup



Finally, **The Where and When:** Great News! You can try the HPE Greenlake backup and recovery service free for 90 days with up to 5TB of data.

Start your trial free here. Don't wait! Act now! Hurry!

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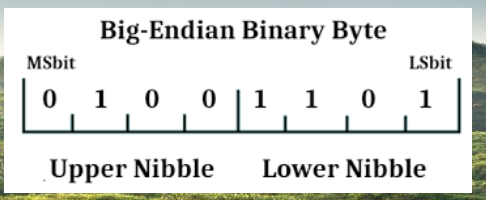

Alas, this service is not yet available everywhere. Here is the most recent list of available markets for HPE Greenlake backup and recovery: Canada, US, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece , Hungary, Ireland, Israel , Italy, Kazakhstan, Luxembourg, Norway, Netherlands, Qatar, Slovakia, South Africa, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, Australia, Hong Kong, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Thailand, China Romania, Portugal, Puerto Rico, Korea and Saudi Arabia!.

The Least Significant Bit... Backup and Recovery is a strategy not a solution. The strategy should be focused on recovery and the tolerances the business can withstand during an interruption. Once the tolerances are understood a strategy can be developed and policies can be defined to protect all levels of the business.

Much like 2023 is the year of the rabbit at HPE 2023 is the year of the storage. Given the focus on data and data protection the time is right to start talking to your customers about HPE's Backup and Recovery Service. In fact, if you sell Alletra you should automatically think HPE Greenlake backup and recovery. Much like peas and carrots they just go together.

Feel free to reach out to either Chuck, Mauro or your friendly neighborhood HPE Storage SA for additional information

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Resources:

Seismic Customer Presentation HPE Greenlake for Backup and Recovery

Seismic Briefcase for HPE Backup and Recovery

CRN Antonio Neri's 7 takeaways from HPE's Security Analysis Meeting

ESG Impact Validation Modernize Data Protection

Technical White Paper HPE Greenlake for Backup and Recovery

Data Services Cloud Console Security Guide Highlights include:

Secure platform

- No organization data that has been written/backed-up is exposed to or accessible from Data Services Cloud Console or the HPE GreenLake Cloud Console.
- User information is stored in the HPE GreenLake Cloud Platform under the terms of the HPE Global Privacy Program to comply with all applicable laws and regulations.
- User access and management uses MFA and SSO for authentication and enhanced RBAC, using Roles and Scopes, for authorization.
- Connection of on-premises devices to DSCC is always initiated by the on-premises device, never DSSC—once authenticated a Secure Tunnel using mTLS is set up.

Secure data protection

- No backup data is exposed to the DSCC
- HPE Catalyst is a proprietary and inherently secure protocol that makes Catalyst backups at a lower risk of malware attacks relative to data stored using general purpose protocols. Even if the local backups on the to storage volume are browsed Catalyst encryption and (very soon) data immutability protects against malware attacks.
- All local backups and cloud backups are encrypted (AES 256)
- All data written to the Cloud Protection Store is encrypted and sent over a TLS link
- Backup data immutability protects backup data against malware
- Dual authorization provides another layer of security against bad actors

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Nibbles to Ponder

Today's nibble contemplates the age old question: To TiB or not to TiB? Do you find yourself asking, 'why do sometimes we talk base 2 and others talk base 10'? I know this is not chicken or egg stuff but it can sometimes cause confusion especially when it comes to storage.

Let's start with something that happened a long time ago. In the beginning, there was a pool of slime. Okay maybe not that long ago but sometime between then and now the concept of the kilobyte was born. You know, 1K, a thousand bytes, a KB. We all know (hopefully) it was actually 1024 bytes. Computers understood 1024 however people understood 1000. No big deal to discard 24 little tiny bits, right. No one really got hurt by placing those 24 extra bits on Santa's naughty list, did they? Fast forward 50 years and those extra bits can really mean something. In the world where things are now talked about in Tera and Peta those extra bits add up. In fact the difference between PB and PiB is roughly 12.5%! To put it in perspective, 1PB of 4K movies would take 2.5 years in a nonstop binge watch to finish. If we used PiB it's only 2.18* years. Either way that's a lot of popcorn. *You can trust my math, I'm married to an accountant ☺

Let's face it, storage and drive manufactures like to use base10. Maybe it's because marketing and lawyers are involved, who knows. I'm not taking marketing and lawyer involvement like "New Coke" but involvement more like just make my life easier. It's simply easier for the general population to consume and talk base 10, even at parties. "I just got a new 2 TB disk drive for my laptop". Easier than "My new 1.81899 TiB disk drive for my laptop".

My personal thought is, manufactures are simply trying to deal with stigma of shrinkage as seen here.

Selling a 92 TB storage array is perhaps easier than selling an 83.6735 TiB storage array. More is better, right?

*30 years if drive mechanism shrinkage.

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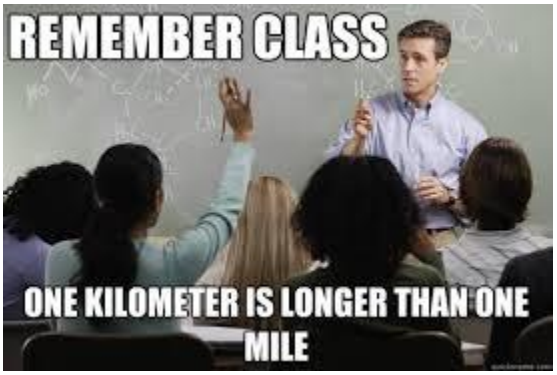
Whatever the case storage sellers need to be aware we are using two different units of measure to describe the same thing. It is almost as confusing as miles and kilometers.



About the Authors:

Back when the T-Ironsaurus-Rex ruled the datacenter and memory was measured in Kilobytes (up to 8192k in this baby shown here)

Chuck Hooke (some call him “The Captain”) somehow got his hands on an NCR tower running ATT system V R3 UNIX (yes kids that is a 5 ¼” floppy drive) and thus began the affair with the beast within.

I have been at HP / HPE for 25 years in numerous positions. I spent my first 10 years in the call center on the mission critical HPUX recovery team, then the next 7 years out in field delivery and the last 8 years in pre-sales. Currently, I consider myself a technology evangelist with the worldwide channels and ecosystems team bringing the goodness of HPE products and services to the channel.

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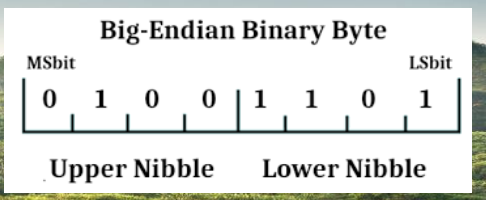

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Mauro Bassani started his career in a time when products like this (Windows NT (Not Today)) existed

However things got real exciting when hardware became virtualized using this great technology:

Mauro worked for great Startups and big Vendors alike, and that is how my love affair with HPE started, through an acquisition

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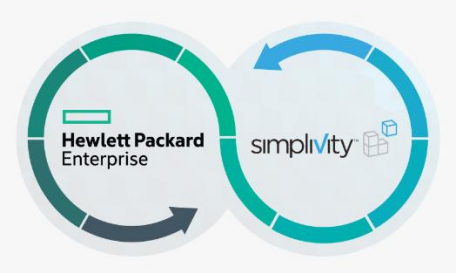

I am now a Technology Evangelist for HPE Storage and HCI solutions in the worldwide Channels and Ecosystems team (even if I secretly want to be a spy from a John Le Carre'book).

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