

IBM Cloud – PowerVS Tech Talk

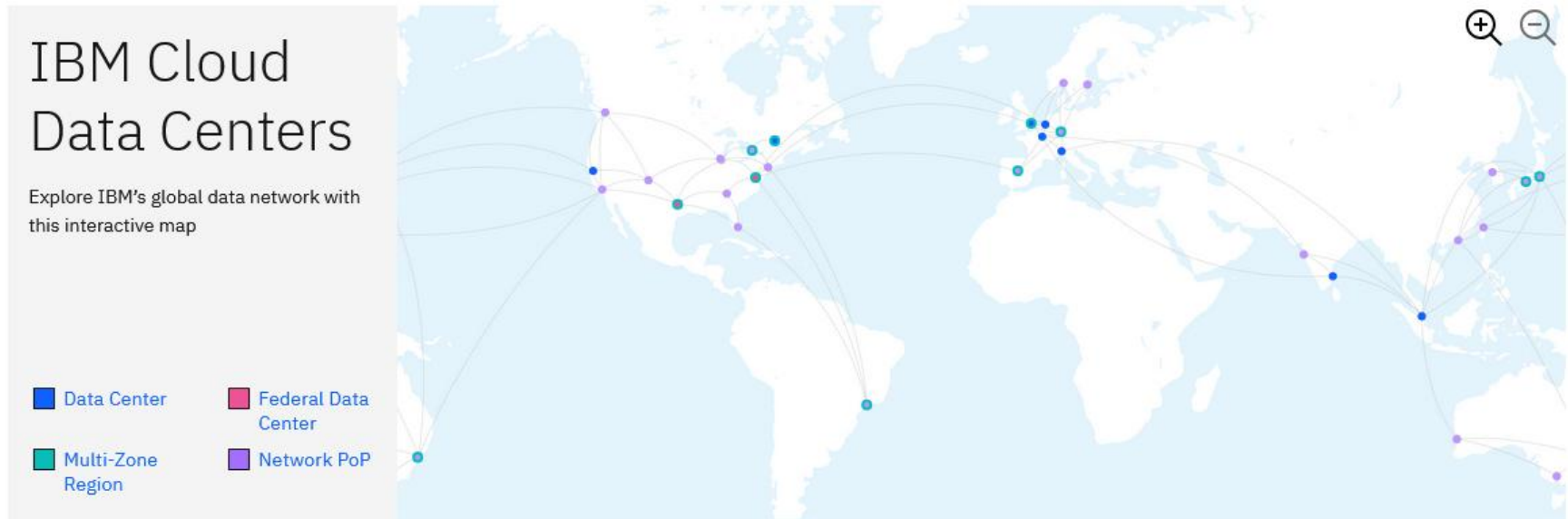
IBM Cloud Solutioning Team – Hungary

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Agenda

- Describing IBM Cloud
 - Locations
 - Type of service (DCs, POPs, etc)
- Connecting to IBM Cloud
- Moving into IBM Cloud - PowerVS
- PowerVS – Where do we start?
- What's under PowerVS?
 - Physical layout
 - PowerVS vs. on-premises – features available
- Key considerations for PowerVS
 - Distance (network latency)
 - Disk tiers
 - Performance Tuning

IBM Cloud service locations - 03/2026



IBM Cloud service regions - 03/2026



Find your IBM Cloud® location

Filter by geography	EMEA	x v			
Location		Multi-Zone Region	Data Center	Federal Data Center	Network PoP
Frankfurt		✓	✓		✓
Madrid		✓	✓		✓
London		✓	✓		✓
Paris			✓		✓
Oslo					✓
Stockholm					✓
Amsterdam			✓		✓
Milan			✓		✓

<https://www.ibm.com/solutions/cloud-data-centers>

IBM Cloud benefits

- IBM Cloud is highly flexible with no commitments!
 - “Pay as you Go” – you pay only what you need until you don’t need it anymore - based on resource consumption
 - Cloud credits are available (contact Sales Representative)
<https://cloud.ibm.com/docs/account?topic=account-codes-credits>
 - IBM Cloud® provides credit opportunities for customers to access more than 130 unparalleled services at a reduced cost. You can easily manage your billing and credits.
 - IBM Cloud offers a variety of codes and credits. A code is shared with the customers, when applied they receive credits, a certain amount that can be spent for IBM Cloud services and support.
- IBM managed infrastructure
 - No local infrastructure cost
 - No infrastructure maintenance tasks
- The latest IBM technology is available always
 - Mind the minimum software requirements for a given technology
- Wide range of cloud (catalog based) integrated solutions
 - Automatic deployments, fast provisioning, rapid deployment
- Seamless integration with the available cloud services
 - COS, Monitoring (cloud resources), Backup and DR full fledged solutions, security – comply with industry standards
 - Integration with AI – watsonx

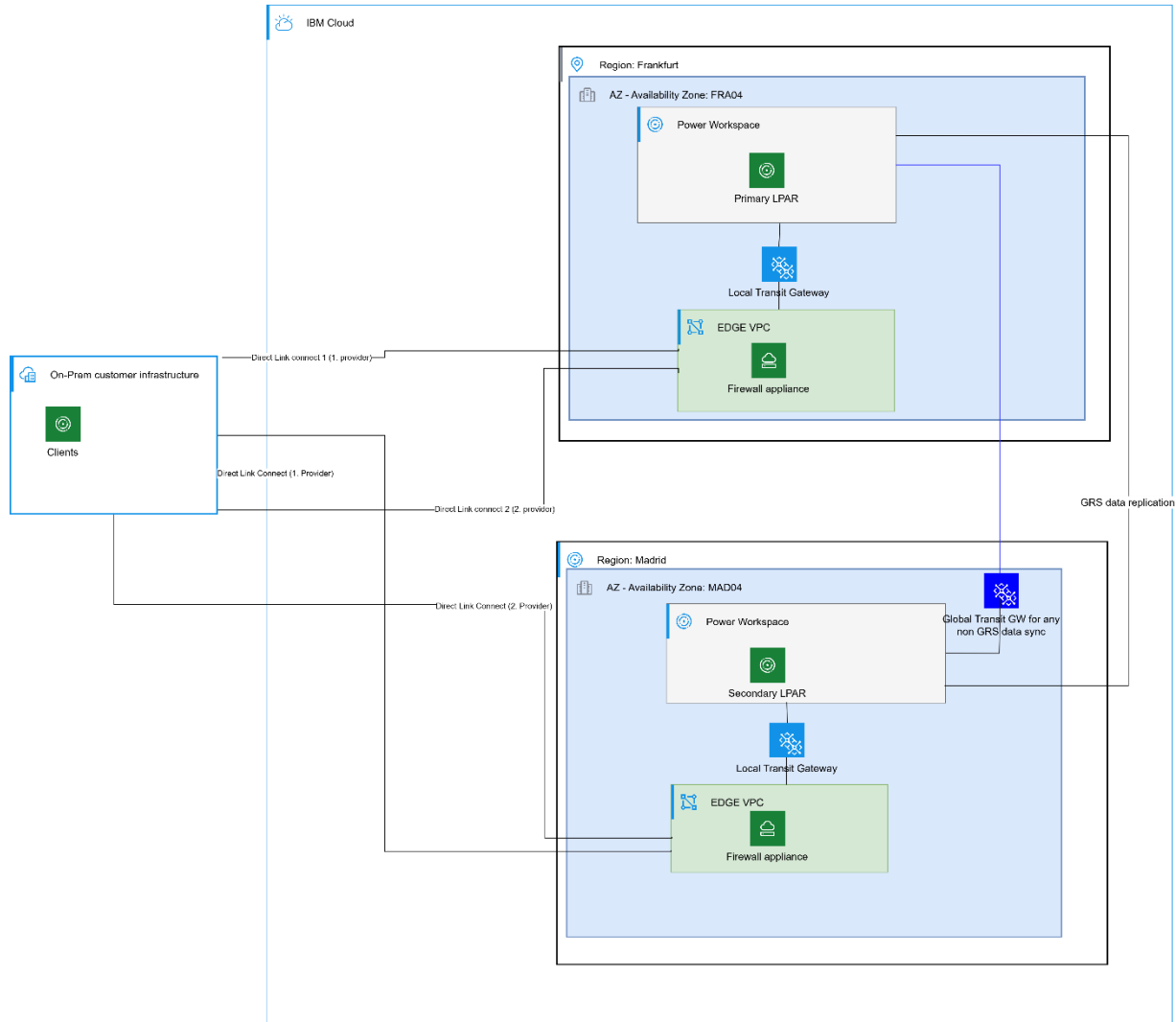
Connecting to IBM cloud

- Look for the closest IBM Cloud entry point
- For Hungarian customers (03/2026) the closest cloud entry point is Frankfurt
 - DL (Direct Link 2.0) via a dedicated service provider – DE-CIX – TBD with local provider(s)
 - Site to Site VPN – On prem datacenter has connection to IBM cloud via IPSEC/VPN
 - Client to Site VPN – Single user connection / workstation connection to IBM Cloud via VPN

Moving into IBM cloud

- Same method applies as with an on-prem move
 - Except LPM (Live Partition Mobility) – requires shared storage
- AIX
 - Mksysb / savevg transfer to COS (as OVA image) or NIM server and restore mksysb (boot from NIM, alt_disk tools, etc)
 - Boot PowerVS LPAR from on-prem NIM and restore mksysb
- IBM i
 - Backup, transfer to cloud and restore
 - BRMS backup restore
 - On-prem Falconstor VTL backup and transfer to cloud
 - MIMIX or other 3rd party software
 - Migrate while active (db2 based function)
- SAPHANA
 - HSR (Hana Replication Service)
- Oracle
 - Backup and restore
 - Oracle RMAN - sync

IBM Cloud – typical environment



PowerVS - Where do we start?

- FAQs coming from customers about PowerVS
 - What is the underlying architecture?
 - How about performance?
 - What HA/DR and backup solutions are available in IBM Cloud?
 - Security standards IBM Cloud complies with
 - When all above understood – How can we configure it (cloud GUI, CLI, terms, etc)?
- Before we can go into PowerVS migration
 - What workloads or functions I am planning to migrate into PowerVS and why?
 - What are the customer requirements and expectations?
 - Should I migrate everything or should I create a hybrid environment?
 - Is my environment ready to be moved into the cloud?
 - Software versions
- Presales support available
 - Gather info/data from customer environment(s) and evaluate it for PowerVS move - (on-prem setup review ; software versions ; features, functions to be moved to PowerVS)...
 - General or specifically focused workshop on a selected topic
 - Discuss the options and develop a plan for cloud migration

Infrastructure under PowerVS

- In general, we can say that the IBM Cloud - PowerVS environment is configured the same way as you would do it in your own DC
 - In an AZ, the Power servers are connected to a **dual fabric configuration (LAN & SAN)** – every compute rack has 2x SAN64B, 2x100G CISCO configuration
 - **LAN** is being virtualized by **dual Virtual I/O servers** - LACP (EtherChannel for HA and bandwidth) – Optical cables
 - **SAN** is being virtualized by **dual Virtual I/O servers** – vFC – NPIV - Disk subsystem is IBM Flash - **FS9500** (older AZs might still have FS9200) **NO ISCSI!**
 - **PowerVC** is being used as orchestrator and **NovaLink as PowerVM management hosts** managing Power system through dual **HMCs** (Hardware Management Consoles)
- Remarks:
 - User access is not possible to these resources above
 - Cloud infrastructure team **applies best practices – tuning when creating PowerVS hardware environment and its virtualization layers**
 - 24/7 support available for the infrastructure

PowerVS vs. on-premises

- Network latency - IBM cloud is remote, not on-prem. Target the closest DC or POP
- Disk tiers IOPS/GB (4 tiers are available)
- The physical core-to-virtual core ratio is 1:1. For shared processors, fractional cores round-up to the nearest whole number (unless you use “shared processor pools” for a given LPAR):
 - 1.0 physical core define 1 virtual CPU
 - 1.25 physical cores define 2 virtual CPU
- Dynamic CPU changes
- Dynamic memory (dedicated) changes
- Dynamic Virtual Ethernet adapter allocation and deallocation
- Standard OS tuning based on workload
- LPAR capture and deploy, images, etc.. same as with PowerVC

IBM Cloud - PowerVS disk tiers

- There is a setting/tunable required to be selected at every disk allocation in PowerVS which is called 'disk tier'
- What disk tier should I choose for my workload?
 - The disk I/O IOPS performance is calculated in **IOPS/GB** – how many I/Os per second is allowed per Gigabyte
 - The available options in PowerVS are:
 - **Tier 3 (3 IOPS / GB)**
 - With a **100GB** size LUN/disk you have **300 IOPS** on that volume as maximum allowed.
 - **Tier 1 (10 IOPS / GB)**
 - With a **100GB** size LUN/disk you have **1000 IOPS** on that volume as maximum allowed.
 - **Tier 0 (25 IOPS / GB)**
 - With a **100GB** size LUN/disk you have **2500 IOPS** on that volume as maximum allowed.
 - **Fixed IOPS (5000 IOPS)**
 - With any size LUN/disk you have 5000 IOPS on that volume as maximum allowed.
 - Note: Chose your tier carefully for your workload. If your workload is disk I/O intensive, the performance can be highly impacted with disk tiering! Disk tiers can be dynamically changed via GUI and with CLI

IBM Cloud - PowerVS disk tiers

- Tier 3 (3 IOPs /GB)... is it good? Is it bad? – It depends on the workload you want to put on a tier 3 disk
- A consumer USB 3.0 flash drive - ~35 USD can do around **≈2,000 IOPS read** and **≈700 IOPS write** for random 4 K
- Let's say you want to do a POC for your production database on tier 3 storage in PowerVS. **Let's allocate a 512GB size disk** for that. So, the calculation will be: **3 IOPS x 512 GB = 1536 IOPS** maximum allowed on that volume (r+w summa). It has even lower read performance (IOPS) than the example flash drive above
- Do you want to put your production database on a disk that can provide similar or lower IPOS than a consumer flash drive? No...
- What is the recommendation then? Next page...

IBM Cloud - PowerVS disk tiers

- Do the math and choose **disk tier and size** carefully, both are influencing IOPS
- **Monitor your current workload (on-prem)** with appropriate monitoring tool(s) to estimate the required IOPS for your POC and for your target LPAR in PowerVS
- Chose disk size and tier based on **cost versus performance** basis, find the right balance which satisfies the expected performance
- Do not use huge size volumes (same applies for on-prem)
 - On every operating system a “disk” is a single device with default pre-allocated resources (e.g.: AIX – queue_depth , LVM – pbufs, etc)
- When you configure volumes in a cloud environment, please mind the **3 key factors** for performance:
 - Volume tier, volume size, the number of volumes / OS

IBM Cloud – PowerVS useful links

- Go for PowerVS!
 - Enterprise cloud for mission critical workloads
 - <https://www.ibm.com/products/power-virtual-server>
 - Compliance certifications
 - <https://cloud.ibm.com/docs/power-iaas?topic=power-iaas-compliances-list>
- First steps to configure a PowerVS workspace
 - <https://cloud.ibm.com/docs/power-iaas?topic=power-iaas-creating-power-virtual-server#creating-service>

Thank you!