

CLOUD COMPUTING A JEHO VYUŽITIE

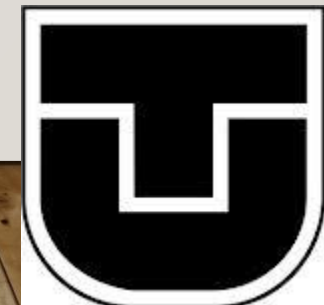
ING. MARTIN HASIN, PHD



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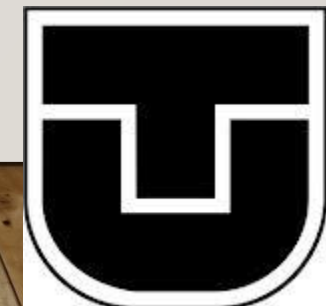
ČO JE CLOUD COMPUTING?

- Model poskytovania IT služieb cez internet
- Druhy cloudu: Public vs. Private
 - Public Cloud – Azure, AWS, Google...
 - Private Cloud - TUKE Cloud
- Flexibilita a škálovateľnosť



PUBLIC CLOUD COMPUTING - AZURE

- **Prístup k licenciám Microsoft SW**
- **Prístup do Azure Cloud s možnosťou využiť kredit 200 \$**
- **Využívanie študentských licencií v rámci Office 365**
- **Prístup k OneDrive s kapacitou 1 TB**
- <https://uvt.tuke.sk/sk/cloudove-riesenia>



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PUBLIC CLOUD COMPUTING - AZURE

Microsoft Azure

Hledat prostředky, služby a dokumenty (G+/)

Domů > Education

Education | Software

Přehled

Výukové materiály

- Role
- Software**
- Výukové materiály
- GitHub

Potřebujete pomoc?

Software Klíče

windows 11

Produktová kategorie : **Vše** Operační systém : **Vše** Typ sy

4 Položky

Název ↑↓	Produktová kategorie ↑↓	Operační systém ↑↓
Windows 11 Education, version 24H2	Operating System	Windows
Windows 11 Education, version 24H2	Operating System	Windows
Windows 11 Education N, version 24H2	Operating System	Windows
Windows 11 Education N, version 24H2	Operating System	Windows

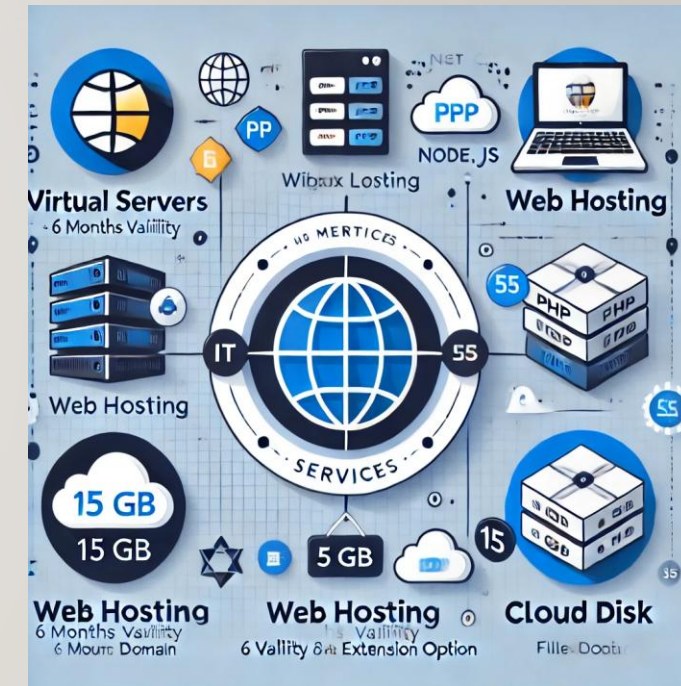
Pomozte vylepšit tuto stránku.



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CLOUD COMPUTING NATURE

- Virtuálne servery (VM):
 - Windows / Linux
 - Platnosť VM na 6 mesiacov s možnosťou predĺženia
- Webhosting:
 - PHP, Node.js, .NET Core, MySql
 - Vlastná doména
 - 5GB disku
- Cloud Disk:
 - 15 GB disku na zdieľanie súborov



CLOUD COMPUTING NA TUKE

CLOUD 

Catalog Deployments Inbox

Catalog 8 items 

 Search for catalog items by name or description

Sort: Name (ascending) 

**Microsoft Windows 10**

Use this blueprint to deploy a Microsoft Windows 10 Pro N x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Microsoft Windows 11**

Use this blueprint to deploy a Microsoft Windows 11 Education x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Microsoft Windows Server 2022**

Use this blueprint to deploy a Microsoft Windows Server 2022 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Microsoft Windows Server 2025**

Use this blueprint to deploy a Microsoft Windows Server 2025 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Ubuntu 22.04 Desktop**

Use this blueprint to deploy an Ubuntu 22.04 Desktop x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Ubuntu 22.04 server**

Use this blueprint to deploy an Ubuntu 22.04 Server x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

**Ubuntu 24.04 Desktop**

Use this blueprint to deploy an Ubuntu 24.04 Desktop x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)

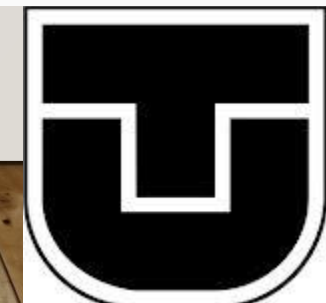
**Ubuntu 24.04 server**

Use this blueprint to deploy an Ubuntu 24.04 Server x64 VM

Business group Cloud BG

Service TUKE

[REQUEST](#)



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WEBHOSTING NA TUKE

martin.hasin.website.tuke.sk Active

WordPress Dashboard Hosting & DNS Mail Plesk Apps Get Started

Files & Databases

- Connection Info for FTP, Database
- Files
- Databases
- FTP
- Backup & Restore
- Website Copying
- Nextcloud

Dev Tools

- PHP Version 8.2.29
- Logs **Issues detected**
- Scheduled Tasks
- Monitoring **Not connected**
- Git
- PHP Composer
- WordPress Management
- Website Importing
- Performance Booster 3 boosts available

Security

- SSL/TLS Certificates Security can be improved
- Imunify
- Password-Protected Directories
- Web Application Firewall
- Advisor

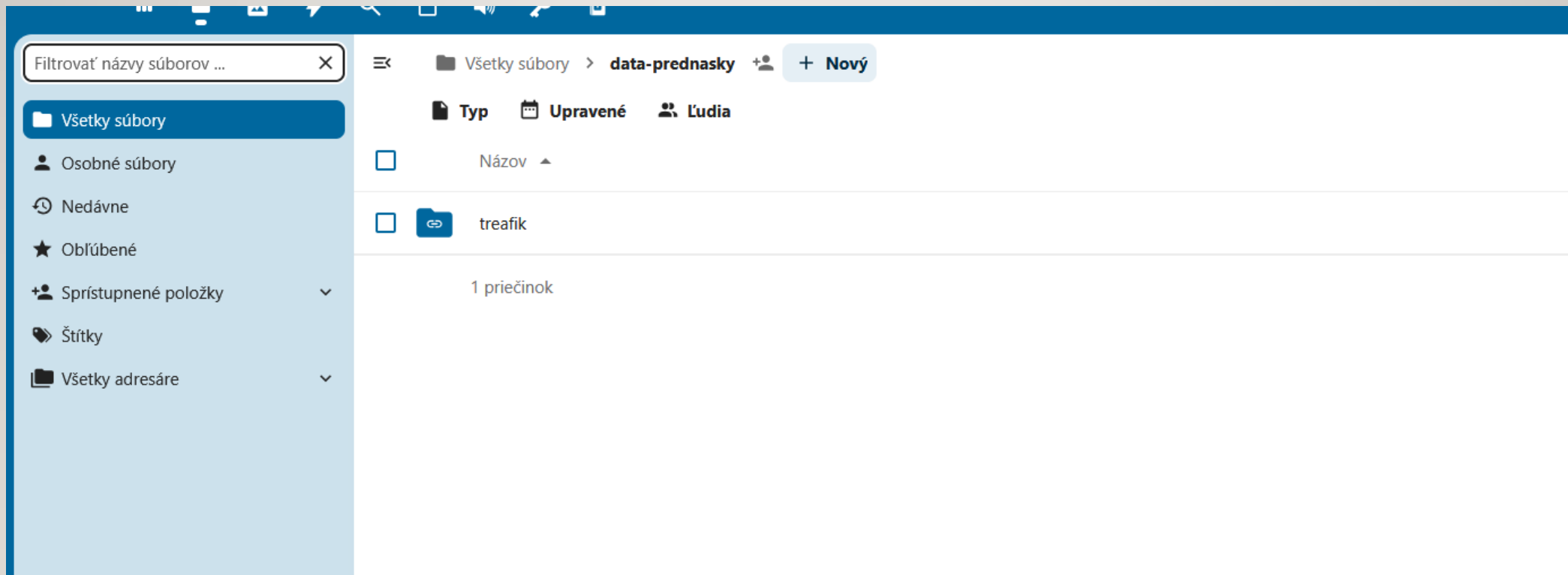
Website at [httpdocs](http://docs) IP address 147.232.16.52(v4), 2001:4118:200:1000::52(v6) System user ftp-mh476ndwebiste



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DATA HOSTING NA TUKE

- 15 GB dát



AKO POŽIADAŤ O PRÍSTUP DO TUKE CLOUDU?

Kroky pre získanie prístupu:

1. Navštívte oficiálnu stránku TUKECloud:

Prejdite na <https://cloud.tuke.sk>.

2. Prihláste sa pomocou univerzitných údajov:

Kliknite na možnosť prihlásenia a použite svoje univerzitné prihlasovacie údaje (napr. prihlasovací email a heslo).

3. Vyplňte žiadosť:

1. Po prihlásení vyhľadajte sekciu *Virtuálne servery*, *Webhosting* alebo *Cloud Disk*.
2. Vyberte požadovanú službu a vyplňte formulár so základnými informáciami.

4. Počkajte na schválenie:

Vaša žiadosť bude spracovaná správcom TUKE Cloudu. Môže to trvať niekoľko pracovných dní.

5. Začnite používať služby TUKECloudu



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AKO POŽIADAŤ O PRÍSTUP DO TUKE CLOUDU?

Operačný systém a parametre na požiadanie



OS WINDOWS
Virtuálny server

CPU: Intel(R) Xeon(R) Gold 5218B CPU @ 2.30GHz / Intel(R) Xeon(R) CPU E5-2670 v3 @ 2.30GHz
RAM: až 16GB (dedikovaných)
HDD: 250GB (HDD disk, RAID 10)
Sieť: 10Gbit/s
Prenos dát: Neobmedzené

Možný výber predinštalovaných systémov:

- Windows server 2022
- Windows 11
- Windows 10

Vzdialený manažment: RDP, VMware WEB access
Windows licencie *
Interné snapshoty
Raz týždenne záloha cez VEEAM softvér
Vysoká dostupnosť na VMware technológii
Vzdialený prístup na server pomocou TUKE VPN
Možnosť flexibility parametrov na požiadanie

POŽIADAŤ O PRÍSTUP

Som z fakulty:

FEI

Účel použitia:

Predmet u mireka

Udelenie súhlasu s pravidlami využívania vCloud TUKE:

Súhlasim

Odoslať

Predmet **Your Microsoft Windows Server 2025 is activated and ready for use**

Dear Ing.! Great news! Your requested VM (Microsoft Windows Server 2025) is activated and ready for use!

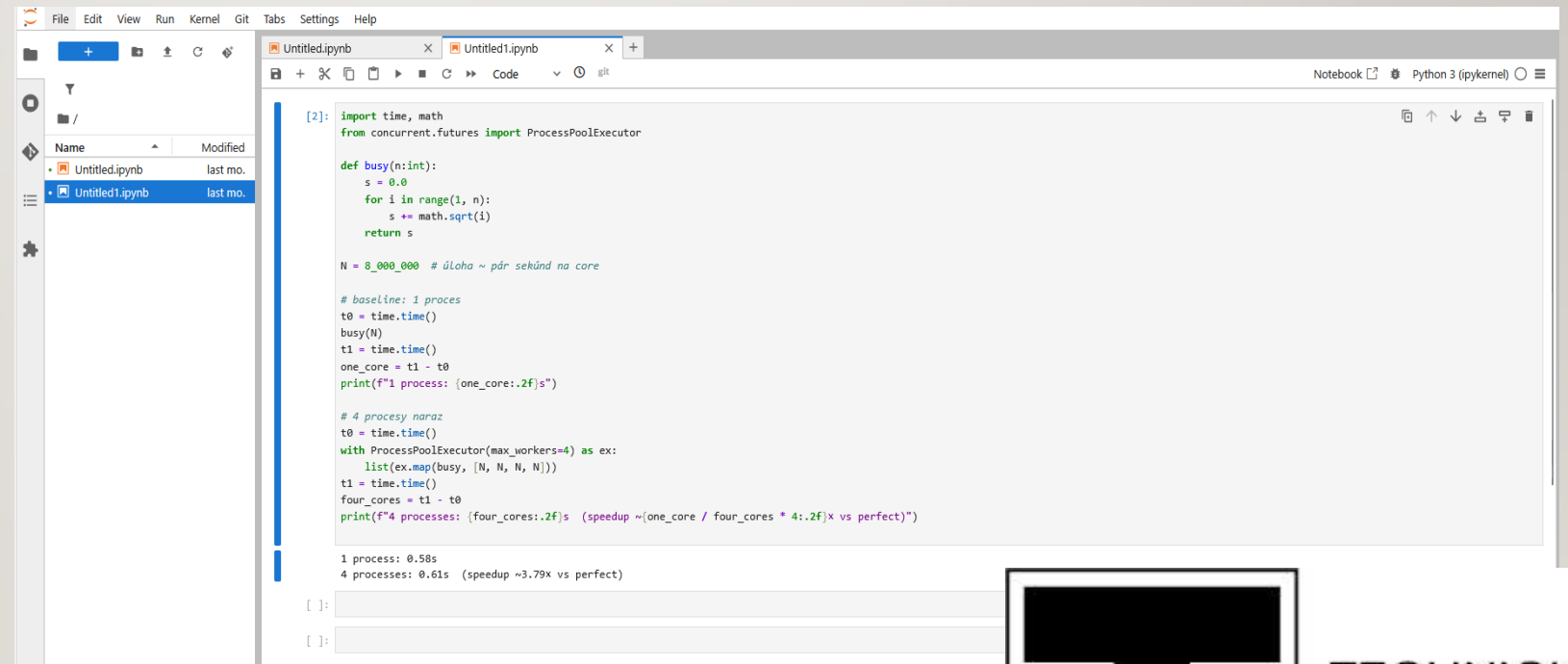
- Your virtual machine ID is: **vra-windows-server-0203**
- Was provisioned with the following CPU: 4, RAM: 8192 MB, and DISK: 250 GB.
- Is available at the following IP address: **147.232.205.81**
- Is available at the following DNS name: **vra-windows-server-0203.virtual.cloud.tuke.sk**
- You can log in with the **administrator** username.



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ML TUKE SERVER

- Jupyter notebook
- Visual studio code
- Rstudio



The screenshot displays a Jupyter Notebook environment with a file explorer on the left and a code editor on the right. The code in the notebook is a benchmark for parallel processing using the `concurrent.futures` module. It defines a `busy` function that calculates the sum of square roots from 1 to `n`. The benchmark compares the execution time of this function on a single process versus four parallel processes. The output shows that using four processes significantly reduces the execution time, achieving a speedup of approximately 3.79x.

```
[2]: import time, math
from concurrent.futures import ProcessPoolExecutor

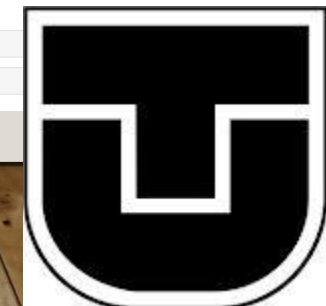
def busy(n:int):
    s = 0.0
    for i in range(1, n):
        s += math.sqrt(i)
    return s

N = 8_000_000 # úloha ~ pár sekúnd na core

# baseline: 1 proces
t0 = time.time()
busy(N)
t1 = time.time()
one_core = t1 - t0
print(f"1 process: {one_core:.2f}s")

# 4 procesy naraz
t0 = time.time()
with ProcessPoolExecutor(max_workers=4) as ex:
    list(ex.map(busy, [N, N, N, N]))
t1 = time.time()
four_cores = t1 - t0
print(f"4 processes: {four_cores:.2f}s (speedup ~{one_core / four_cores * 4:.2f}x vs perfect)")

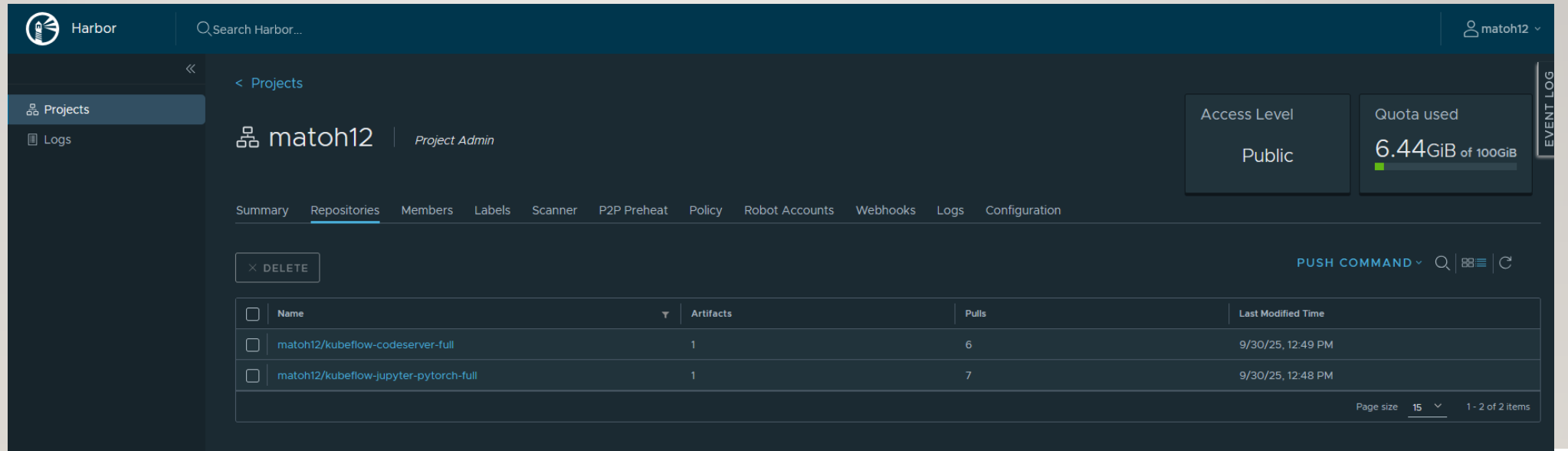
1 process: 0.58s
4 processes: 0.61s (speedup ~3.79x vs perfect)
```



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DOCKER REPOSITORY HARBOR

- <https://repository.cloud.tuke.sk>



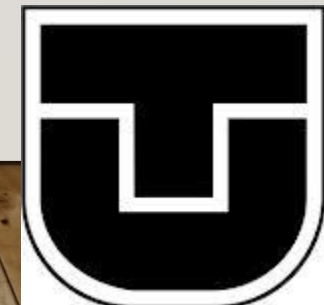
The screenshot displays the Harbor web interface for the 'match12' project. The top navigation bar includes the Harbor logo, a search bar, and the user 'match12'. The left sidebar shows 'Projects' and 'Logs'. The main content area is titled '< Projects' and shows the 'match12' project with a 'Project Admin' role. On the right, there are two summary boxes: 'Access Level' set to 'Public' and 'Quota used' at '6.44GiB of 100GiB'. Below these are tabs for 'Summary', 'Repositories', 'Members', 'Labels', 'Scanner', 'P2P Preheat', 'Policy', 'Robot Accounts', 'Webhooks', 'Logs', and 'Configuration'. The 'Repositories' tab is active, showing a table of repositories. A 'DELETE' button is visible on the left. At the bottom right, there is a 'PUSH COMMAND' field and a table with repository details.

☐	Name	Artifacts	Pulls	Last Modified Time
☐	match12/kubeflow-codeserver-full	1	6	9/30/25, 12:49 PM
☐	match12/kubeflow-jupyter-pytorch-full	1	7	9/30/25, 12:48 PM

Page size: 15 | 1 - 2 of 2 items

LINKY

- <https://wiki.cloud.tuke.sk/>
- <https://cloud.tuke.sk/>
- <https://uvt.tuke.sk/sk/cloudove-riesenia>
- <https://ml.cloud.tuke.sk/>
- <https://repository.cloud.tuke.sk>



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