

Machine Learning On Azure

First Steps

Today’s Goal

- Learn some of Azure’s glossary
- Learn how to create a Machine Learning workspace in Azure
- Avoid unexpected (and huge) bills
- See some of the Hugging Face APIs

Disclaimers

- I’m not affiliated with Microsoft Azure in any shape or form
- I have a few months of experience on this, I’m not a master
- I’ll present the topics in their simplest form
    - however in real life they can get really complex (es Multi Tenancy, Active Directory)

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What is your experience with the cloud providers? (Azure, AWS, GCP, etc)

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What's you experience with transformers?

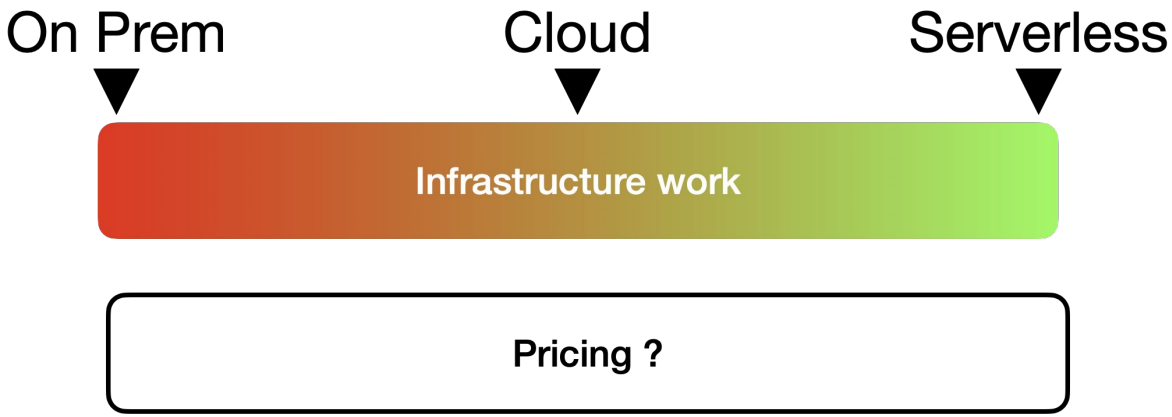
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On Prem vs Cloud vs Serverless

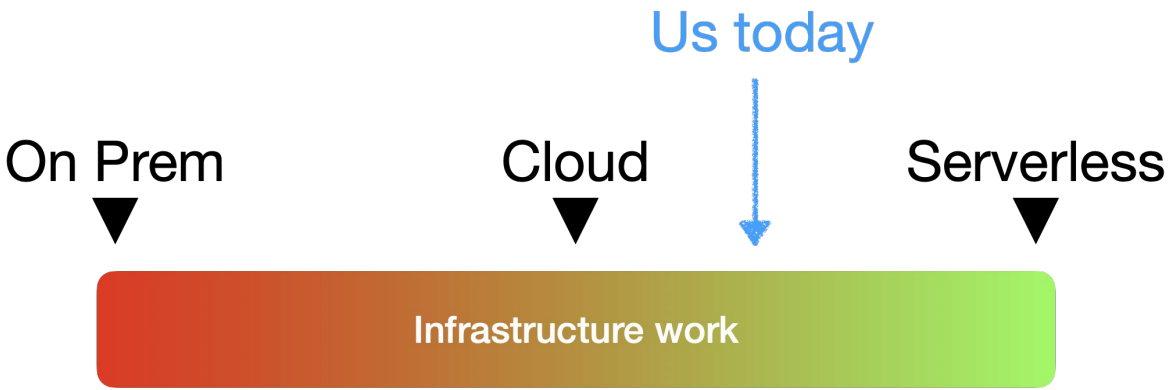
- **On premise:** the server is owned (or managed) by your organization
- **Cloud:** the server belongs to another company and it is managed by them (usually from the power supply to the OS)
- **Serverless:** access to a functionality coded by myself or someone else, run on someone elses server (es AWS Lambda, HF Inference API, Azure AI Language)

https://blog.detectify.com/industry-insights/server-architecture-serverless-vs-cloud-vs-on-prem/

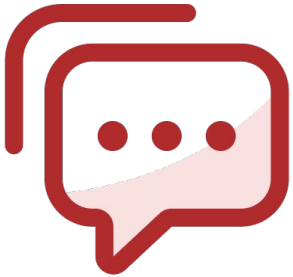
On Prem vs Cloud vs Serverless



On Prem vs Cloud vs Serverless



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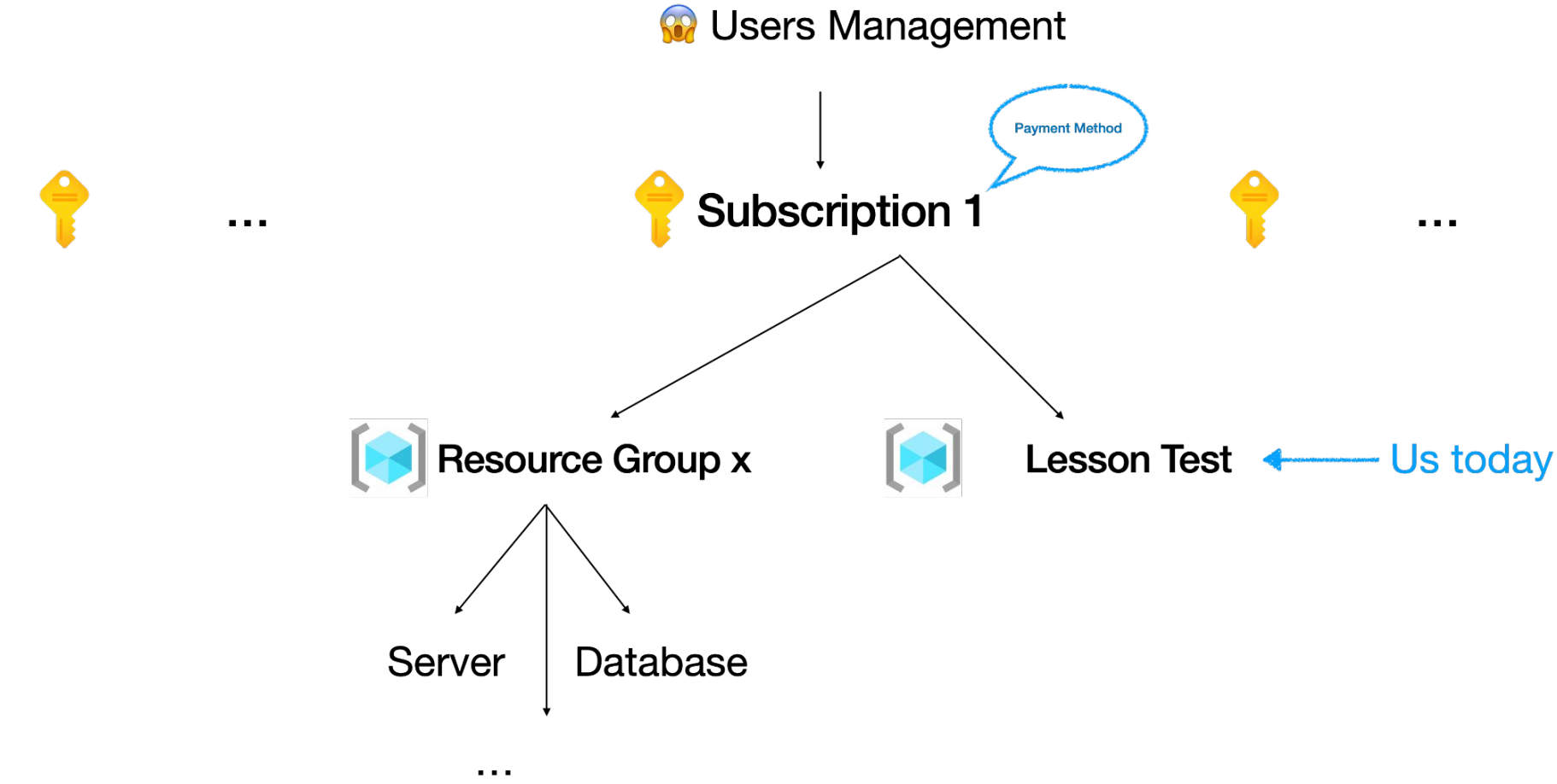


Audience Q&A Session

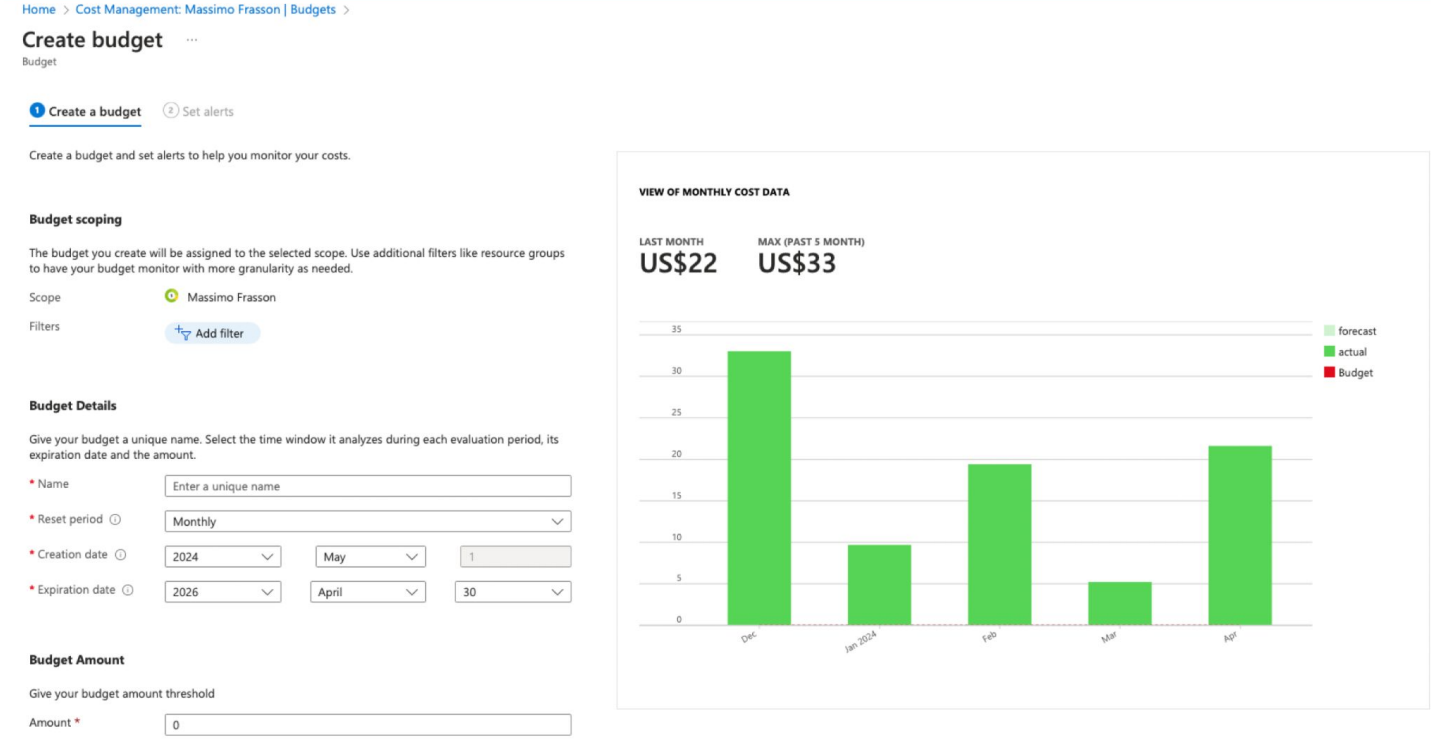
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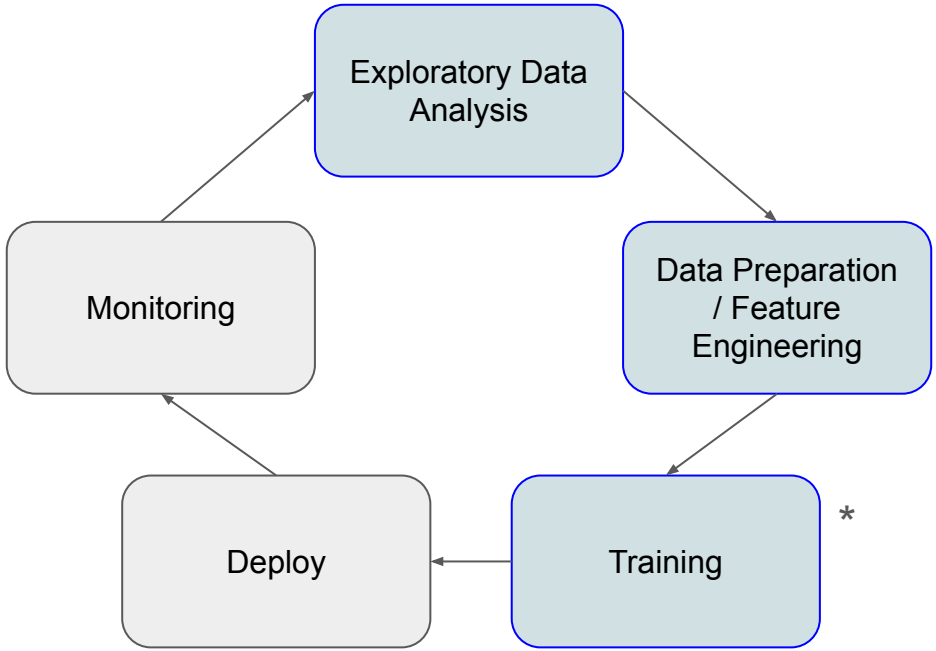
Invoicing


Users Management
Payment Method
...
Subscription 1
...
Resource Group x
Lesson Test
Us today
Server
Database
...

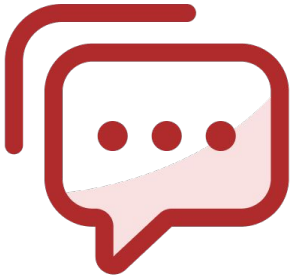
Budgets


Home > Cost Management: Massimo Frasson | Budgets >
Create budget
Budget
1 Create a budget
2 Set alerts
Create a budget and set alerts to help you monitor your costs.
Budget scoping
The budget you create will be assigned to the selected scope. Use additional filters like resource groups to have your budget monitor with more granularity as needed.
Scope
Massimo Frasson
Filters
Add filter
Budget Details
Give your budget a unique name. Select the time window it analyzes during each evaluation period, its expiration date and the amount.
* Name
Enter a unique name
* Reset period
Monthly
* Creation date
2024
May
1
* Expiration date
2026
April
30
Budget Amount
Give your budget amount threshold
Amount *
0
VIEW OF MONTHLY COST DATA
LAST MONTH
US$22
MAX (PAST 5 MONTH)
US$33
35
30
25
20
15
10
5
0
Dec
Jan 2024
Feb
Mar
Apr
forecast
actual
Budget

Machine Learning Workflow



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Azure Machine Learning Studio

https://youtu.be/YLccHH7bS7g?si=pb51_GQ5DfczsMFH

Azure ML Studio: Core Philosophy

- Detach storage and compute
- Compute scales up and down based on our needs
- Storage allows compute scaling
- Storage keeps everything

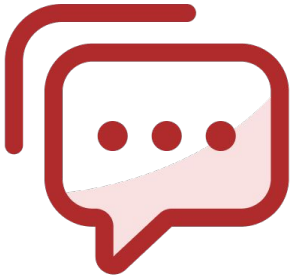
Dependencies

- Azure Storage Account:
    - many storage services by azure
    - Store datasets
    - Store compute folders
    - and more
- Azure Container Registry
    - to store all your docker (and friends) images
- Azure Key Vault
    - to store all your secrets, tokens and so on
- Azure App Insights
    - monitoring web tool

Assets

- Data
  - To simplify access and versioning
- Jobs
  - To improve training and evaluation operations
- Components
  - To standardize processes
- Pipelines
  - To create processes
- Environments
  - python’s requirement.txt
- Models
  - Versioning of models
- Endpoints
  - Deploy models

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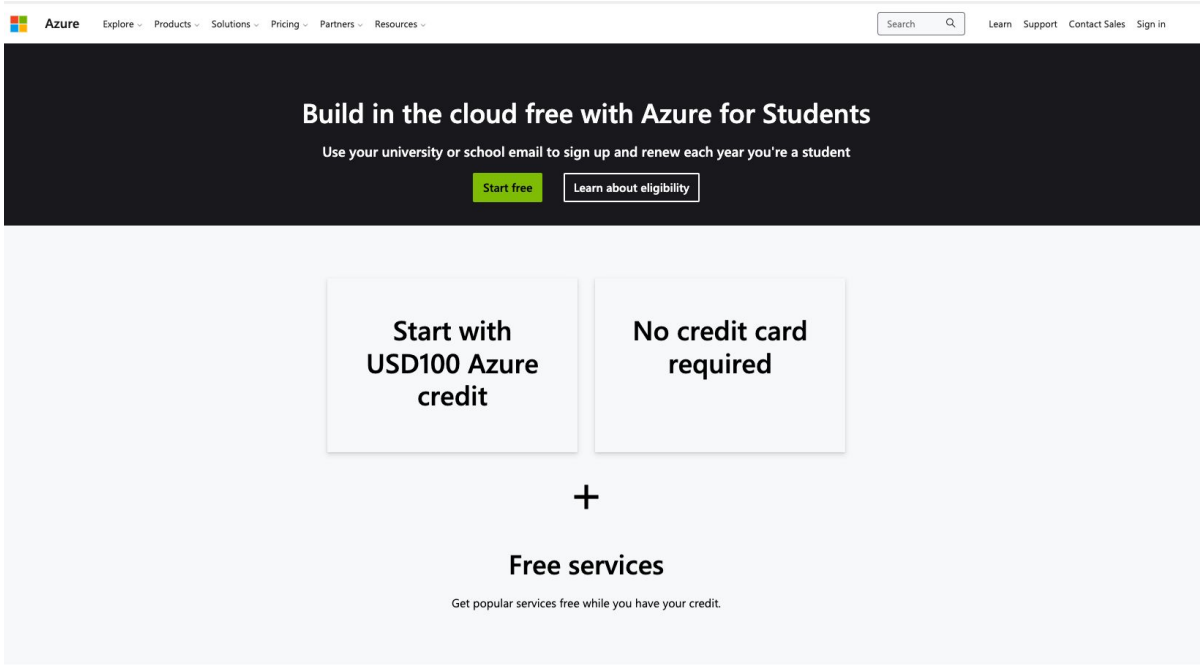


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Let’s try it!

Students can access to free credits!



https://azure.microsoft.com/en-gb/free/students

Live Demo

- Onboarding Azure Machine Learning Studio
- Compute Setup
    - Quota request
- GIT Clone
- Retrieve and setup data assets
- Let’s try a NER model
- Let’s try a generative model
- Questions
- Clean up resources

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That’s it for today!

- You can find me on LinkedIn: https://www.linkedin.com/in/massimofrasson/
- Feel free to reach out and ask for help!