



MLaaS on Azure

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MLaaS

- What do Data Scientists and ML Engineers do everyday?
 - Build Models
 - Train Models
 - Maintain Models
 - Evaluate and Monitor Performance
 - Deploy models
 - Scale them
 - Make them Production ready

MLaaS

- Data Scientists are not Software Engineers
- Just Like PaaS, SaaS, IaaS – MLaaS is bringing ML as a Service to Data Scientists and ML Engineers





MLaaS

- What can MLaaS do?
 - Data pre-processing
 - Model training
 - Run Orchestration
 - Deployment of Models as scale
 - Out of the box predictions, classifications for popular use-cases



Azure Machine Learning

- Cloud service for accelerating and managing ML project lifecycle
- Can create your own Model or use ones from open-source platforms such as PyTorch, TensorFlow, Sklearn etc.

Azure Machine Learning Pricing

General purpose

Balanced CPU-to-memory ratio. Ideal for testing and development, small to medium databases, and low to medium traffic web servers.

D2-64 v3

Instance	vCPU(s)	RAM	Linux VM Price	Machine Learning Service Surcharge	Pay As You Go Total Price	1 year reserved total price	3 year reserved total price
D2 v3	2	8 GiB	€0.115/hour	€0/hour	€0.115/hour	€0.073/hour ~36% savings	€0.051/hour ~56% savings
D4 v3	4	16 GiB	€0.229/hour	€0/hour	€0.229/hour	€0.146/hour ~36% savings	€0.101/hour ~56% savings
D8 v3	8	32 GiB	€0.457/hour	€0/hour	€0.457/hour	€0.291/hour ~36% savings	€0.201/hour ~56% savings
D16 v3	16	64 GiB	€0.913/hour	€0/hour	€0.913/hour	€0.582/hour ~36% savings	€0.401/hour ~56% savings
D32 v3	32	128 GiB	€1.826/hour	€0/hour	€1.826/hour	€1.163/hour ~36% savings	€0.801/hour ~56% savings
D64 v3	64	256 GiB	€3.652/hour	€0/hour	€3.652/hour	€2.326/hour ~36% savings	€1.602/hour ~56% savings

More info at - <https://azure.microsoft.com/en-us/pricing/details/machine-learning/>



Compute Instance vs Compute Cluster

- Compute instance
 - Managed cloud-based workstation
 - Fully configured and managed development environment
 - Single node cluster
- Compute Cluster
 - Compute cluster is a resource that can be shared with other users in your workspace
 - Multi-node
 - Auto-scales each time a run is submitted



Compute Instance vs Compute Cluster

Capability	Compute cluster	Compute instance
Single- or multi-node cluster	✓	Single node cluster
Autoscales each time you submit a run	✓	
Automatic cluster management and job scheduling	✓	✓
Support for both CPU and GPU resources	✓	✓



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