



# AI Investments Multicloud optimization

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# Who we are

AI Investments is a complete investment platform created to offer outstanding return-to-risk results based on the latest achievements of AI in time-series prediction, machine learning and portfolio optimization.



# Challenge for multicloud optimization - AI Investments

- AI based investments portfolio optimization
- Operated on over **200 markets** parallel
- Over **400 machine learning models** used for forecasting – using serverless Cloud
- Over **100 models trained** simultaneously on GPUs – multicloud setup
- **3000 threads** used for parallel distributed portfolio optimization
  - using serverless Cloud
- Up to **500 events per second** (market data, actions)

MELODIC - A single universal platform  
for optimized deployment and management  
of applications in **the cloud**.  
**Including serverless.**



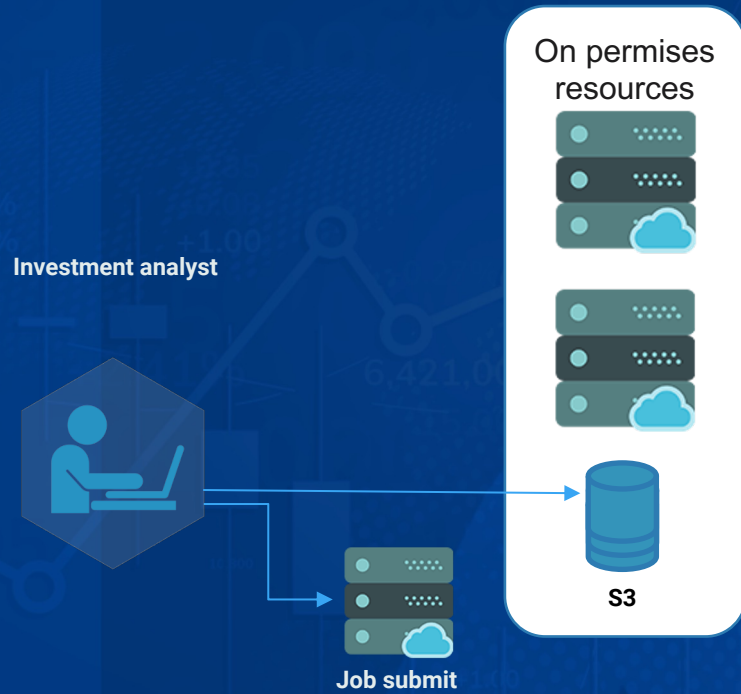
**Actually Cross-Cloud.**  
**and Open Source**

# AI Investments - training predictions models

**Business GOAL:**

Train 50 predictions models in 1 hour using minimal  
number of resources

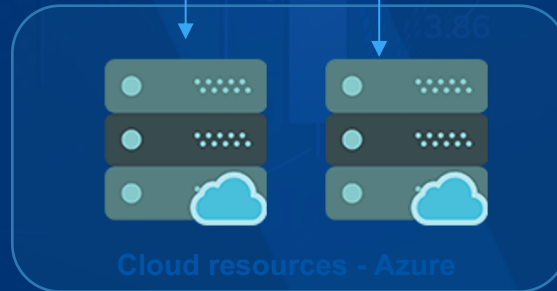
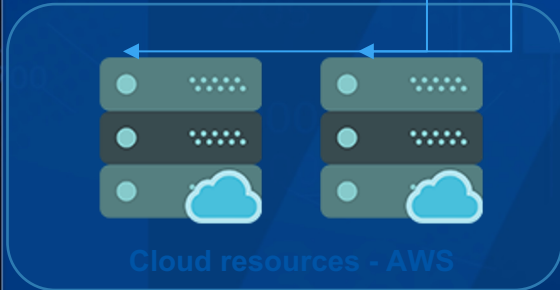
# AI Investments - training predictions models





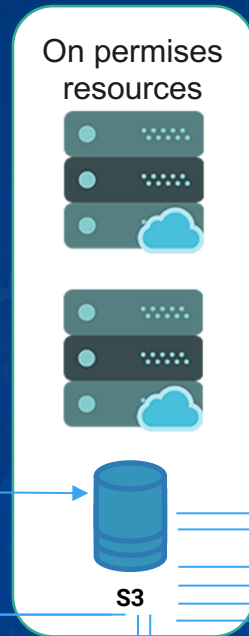
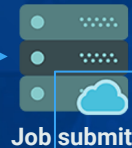
# AI Investments - training predictions models

Time to finish  
Processing: **3h**

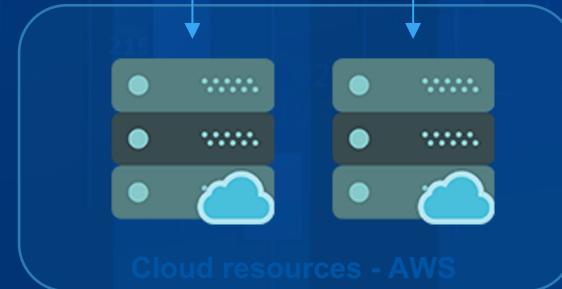
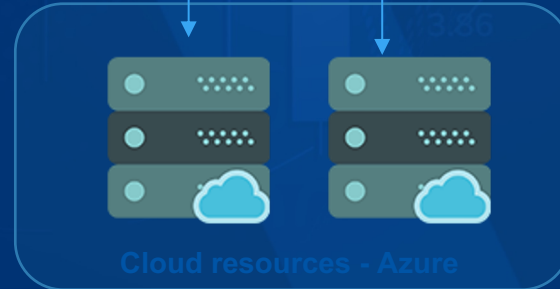
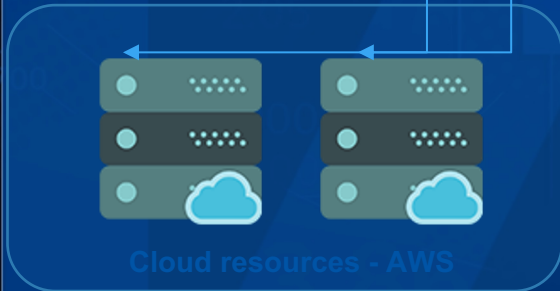
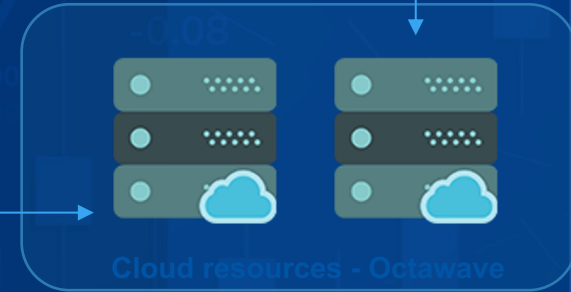
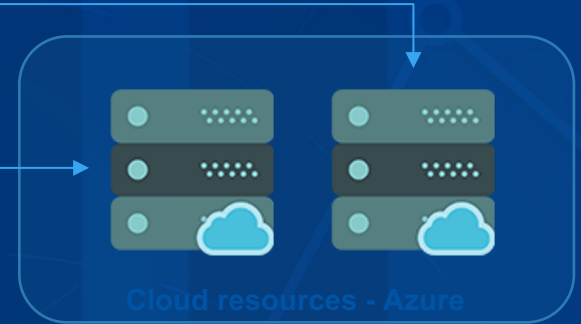


# AI Investments - training predictions models

Time to finish  
Processing: 2h



Mission accomplished!





# AI Investments - Cost savings due to multicloud approach

**Over 60% of cost savings thanks to multicloud optimization!**

On-premises*				Cloud base**			Cloud burst***			Total cost M	Total cost 3Y
Servers	GPUs	GPU time	cost	GPUs	GPU time	cost	GPUs	GPU time	cost		
1	2	1 440	\$181	8	5 760	\$5 599	40	1 133	\$1 101	\$6 880	\$247 695
2	4	2 880	\$361	6	4 320	\$4 199	40	1 133	\$1 101	\$5 661	\$203 807
3	6	4 320	\$542	4	2 880	\$2 799	40	1 133	\$1 101	\$4 442	\$159 918
4	8	5 760	\$722	2	1 440	\$1 400	40	1 133	\$1 101	\$3 223	\$116 030
5	10	7 200	\$903	0	0	\$0	40	1 133	\$1 101	\$2 004	\$72 141
6	12	8 640	\$1 083	0	0	\$0	38	1 076	\$1 046	\$2 129	\$76 659
7	14	10 080	\$1 264	0	0	\$0	36	1 020	\$991	\$2 255	\$81 177
8	16	11 520	\$1 444	0	0	\$0	34	963	\$936	\$2 380	\$85 695
9	18	12 960	\$1 625	0	0	\$0	32	906	\$881	\$2 506	\$90 213
10	20	14 400	\$1 806	0	0	\$0	30	850	\$826	\$2 631	\$94 731
25	50	36 000	\$4 514	0	0	\$0	0	0	\$0	\$4 514	\$162 500

- Cost of optimal deployment: **72 141 USD**

- Difference between the optimal and the most costly deployment: **175 554 USD**

# Benefits

- Effective optimization of resource consumption
- Well-chosen scaling of machine learning training
- Optimizing the work efficiency of the application relative to the budget planned
- Increased reliability of the application (HA)