



**High Performance Machine Learning  
for  
The Data Driven Enterprise**

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# What's next?

SKYTREE

- AI Automation
- Self-tuning Algorithms
- Massive Computational Search
- **Machine|Human**

- Optimization
- Predictive
- Statistical
- Exploratory
- **Human|Machine**

- Reports
- Queries
- Alerts
- **Human**

Past:  
Basic  
Analytics

Present:  
Advanced  
Analytics

Future:  
Auto-ML

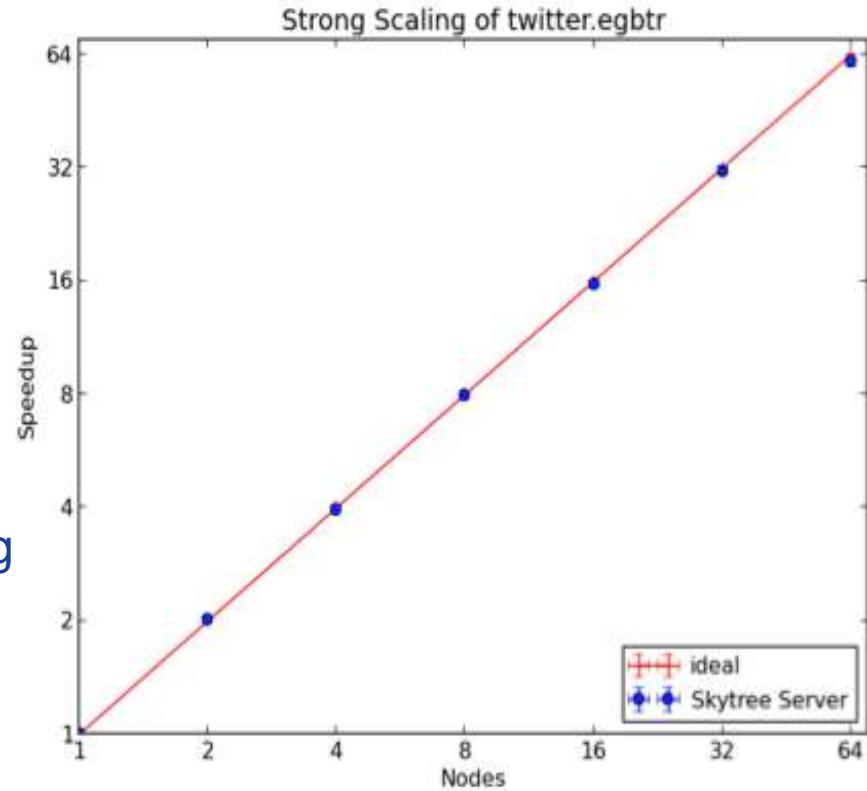
# Scale: Multiple Machines for Higher Performance

Strong scaling\*

Data:

- 64 nodes (1024 cores)

\*Skytree also supports weak scaling

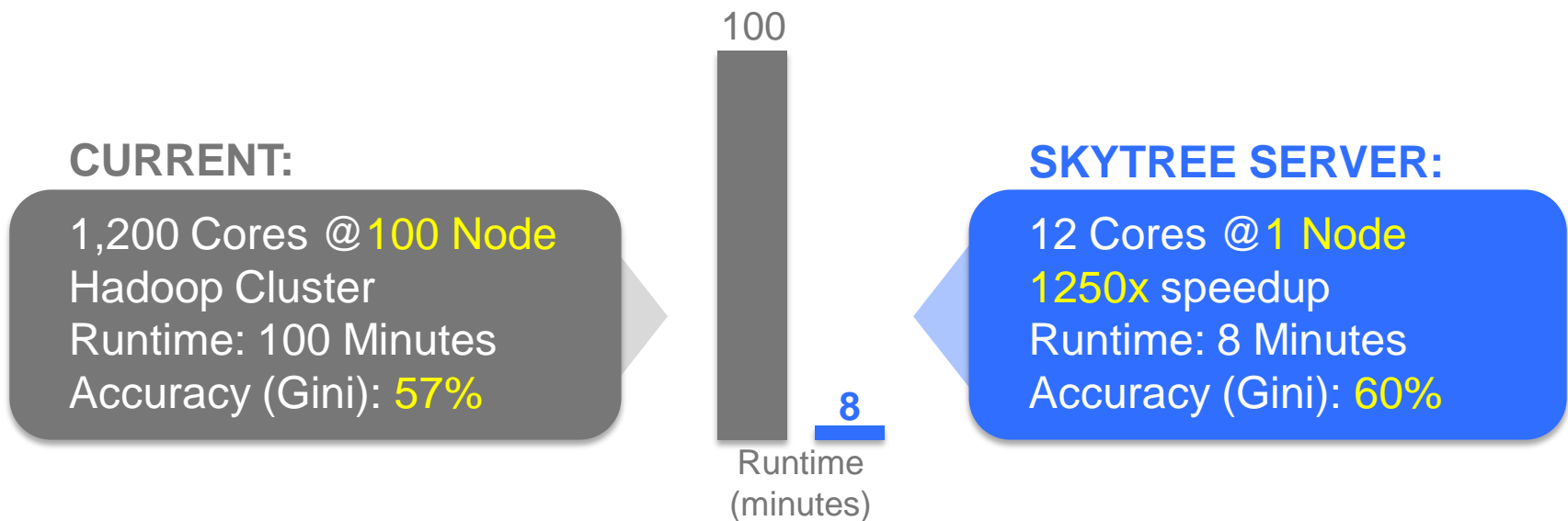


Nodes $N$	Cores	Speedup (ideal)	Mean Speedup $\mu$ (Skytree Server)	Standard Deviation $\sigma$
1	16	1	1.00013	0.0122826
2	32	2	2.00665	0.00644421
4	64	4	3.95269	0.00432337
8	128	8	7.9136	0.0296349
16	256	16	15.6988	0.128573
32	512	32	31.2751	0.110139
64	1024	64	61.1329	0.867193

# Speed – Scale – Accuracy = Competitive Advantage

## Micro Targeting – Find New Customers

- *Global 100 Financial Institution*
- Major Pain points: Speed & Accuracy of Current approach



# Skytree Server

## Common Machine Learning Use Cases

Predictions

Anomaly Discovery

Recommendations

## Tasks

Classification

Regression

Clustering

Density Estimation

Dimension Reduction

Multi-dimensional Querying

## Machine Learning Methods

Broadest number and variety of advanced methods supported for predictive accuracy

## Algorithms – Skytree's Technology Breakthrough

*Skytree has invented ways to reduce the complexity of ML methods from  $O(N^2)$  and  $O(N^3)$  to  $O(N)$  or  $O(N \log N)$*

Distributed

Predictive Accuracy  
= Business Value

Streaming

Ease of Use

Breadth of Advanced Methods

Speed and Scalability

**SAME DATA.  
BETTER RESULTS.**



**SKYTREE**  
THE MACHINE LEARNING COMPANY

**Thank you.**