

AKS or EKS, Which cloud platform should I use for my Kubernetes cluster

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Outline:

- 1 Introduction to the topic
- 2 Why is this topic relevant?
- 3 Overview of our approach
- 4 Performance / Testing
- 5 Simulator/Calculation: Cost results for each service
- 6 Interpretation of results: Performance+Cost
- 7 Conclusion

Introduction

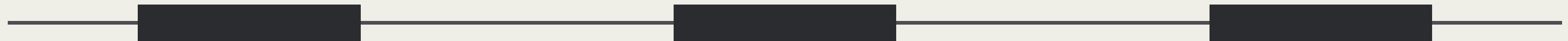
AKS

EKS

Which one to use for my Kubernetes Cluster?

Why is this topic relevant?

3 MAIN REASONS



PERFORMANCE OPTIMIZATION

UNDERSTANDING HOW EACH PLATFORM HANDLES WORKLOADS CAN HELP BUSINESSES TAILOR THEIR INFRASTRUCTURE FOR OPTIMAL PERFORMANCE.

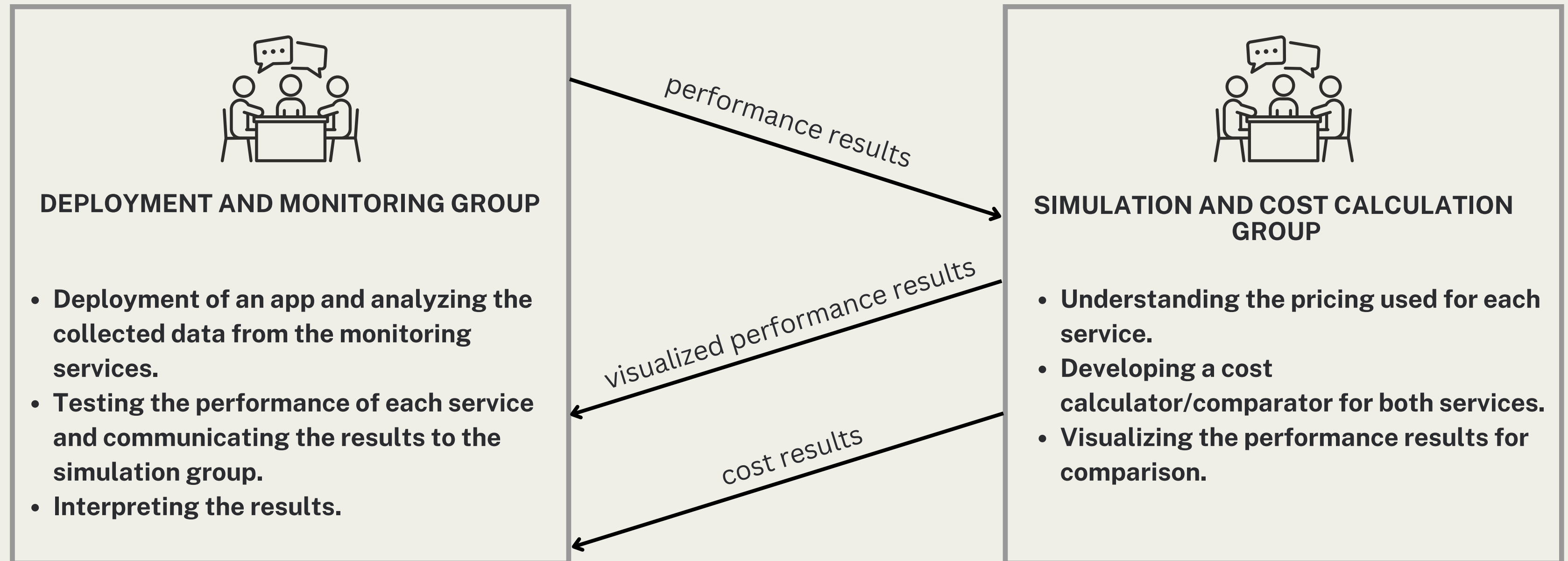
COST EFFICIENCY

BY COMPARING COSTS, COMPANIES CAN MAKE INFORMED DECISIONS THAT ALIGN WITH THEIR BUDGET AND FINANCIAL PLANNING.

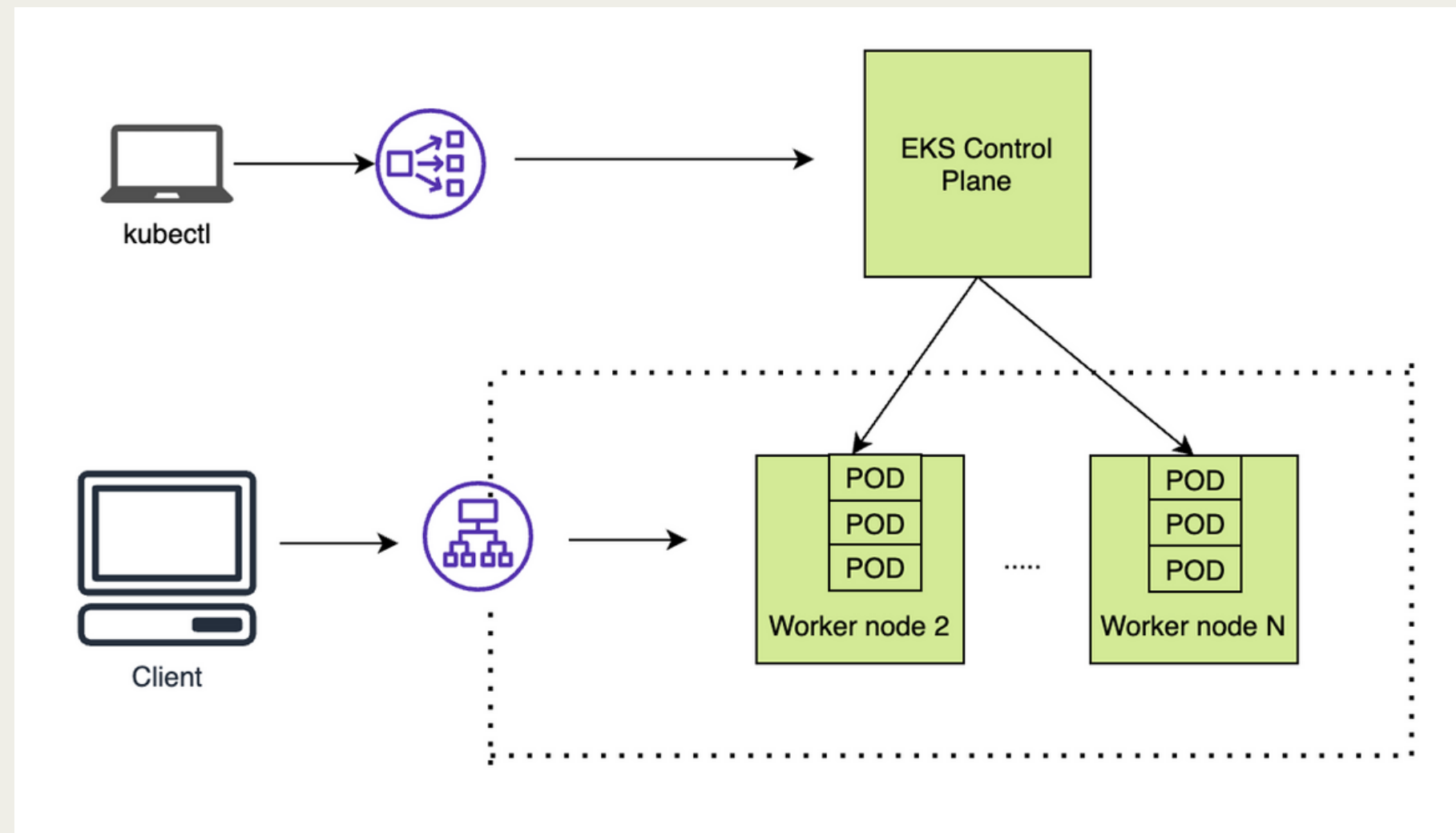
STRATEGIC INVESTMENT

CHOOSING THE RIGHT PLATFORM IS A STRATEGIC INVESTMENT IN THE COMPANY'S FUTURE, IMPACTING EVERYTHING FROM DEVELOPMENT SPEED TO MARKET PRESENCE.

Overview of our approach



Cluster Configuration and Deployment



CLUSTER ARCHITECTURE

Performance / Testing:

Metrics Selection for Performance Comparison

- **Metrics:**
 - ***Availability & Reliability (uptime, error rate)***: Ensures consistent uptime, crucial for seamless operations.
 - ***Scalability***: Measures the platform's ability to handle increasing workloads.
 - ***Latency & Response Time***: Reflects the system's responsiveness under load.
 - ***Resource Utilization***: Examines CPU, memory, and storage efficiency.

The chosen metrics offer a holistic view, aiding in a nuanced decision-making process, aligning with project-specific needs.

Performance / Testing:

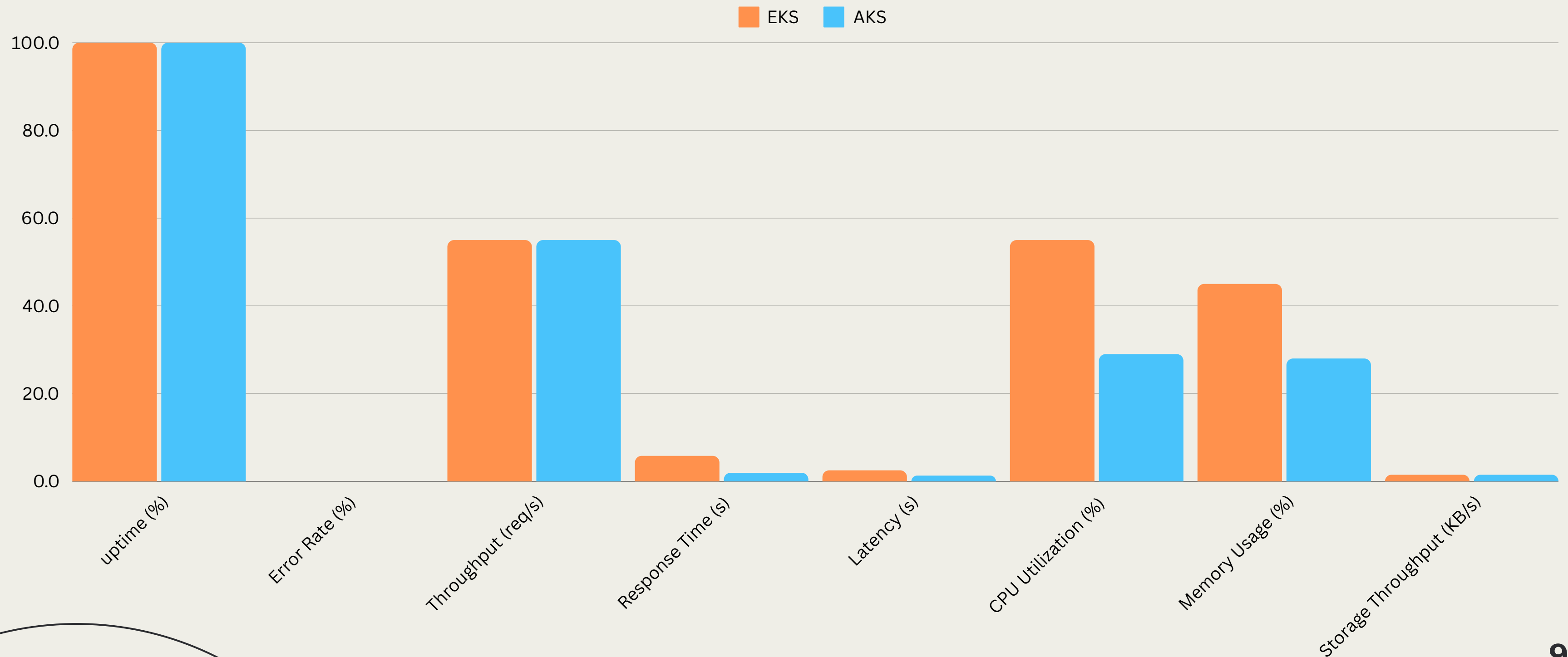
Metrics Collection and Analysis Process

- **Collection Process:** Retrieved data from Prometheus and Grafana graphs during each load testing scenario (Load generated by K6).
- **Load Levels:** Each scenario represents a specific load level to simulate real-world usage.
- **Assembly and Analysis:** Results assembled and meticulously analyzed for performance metrics.
- **Averaging:** Calculated average values for each metric to derive conclusive insights.
- **Conclusion:** Rigorous data collection and analysis process ensures accurate performance evaluation for both EKS and AKS.

Performance/Testing:

Performance results

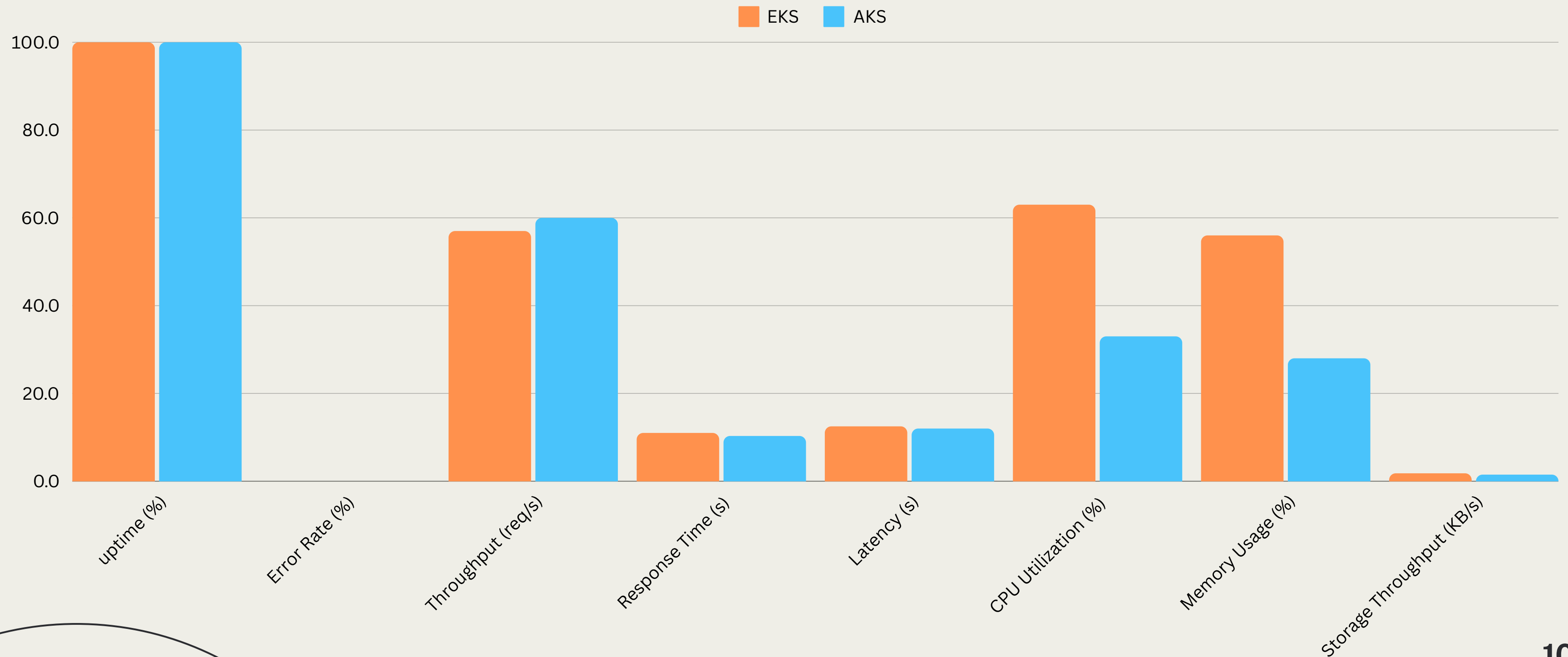
Low Traffic (~500 user)



Performance/Testing:

Performance results

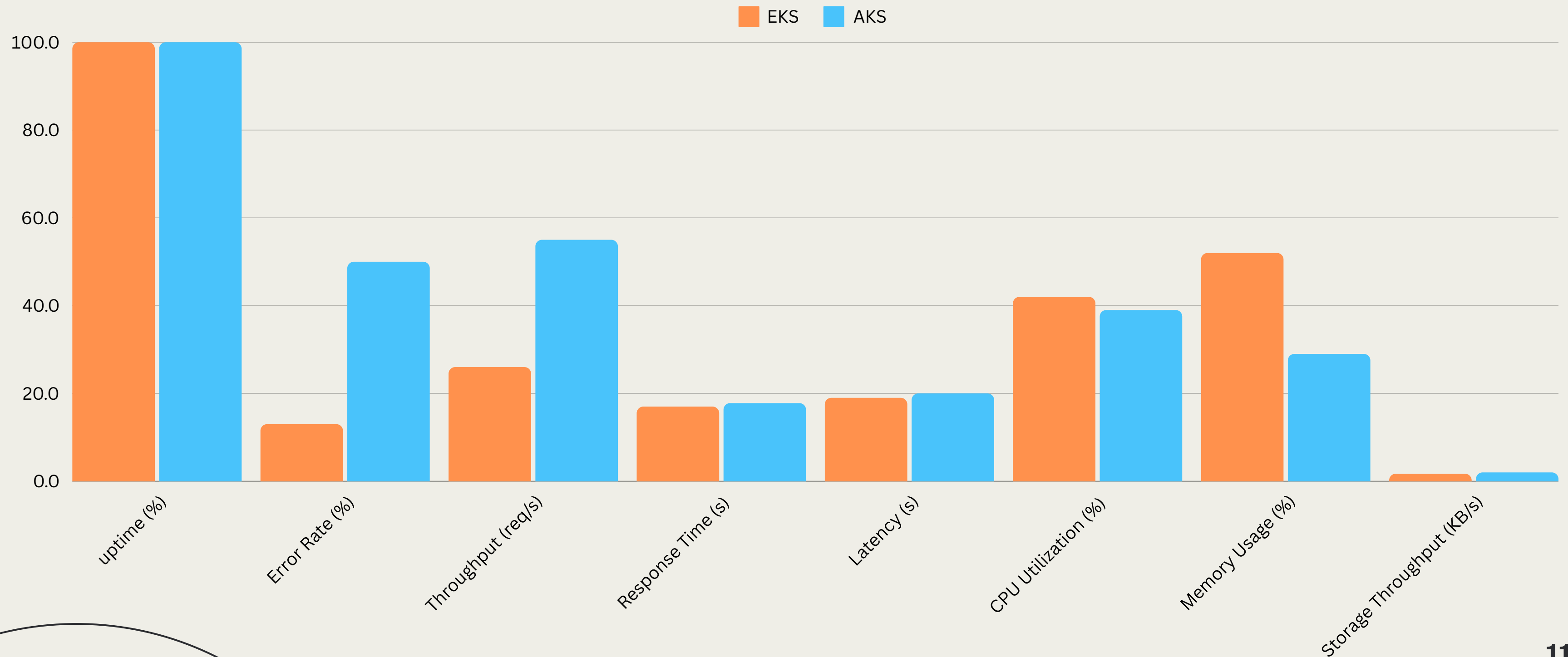
Medium Traffic (~1000 user)



Performance/Testing:

Performance results

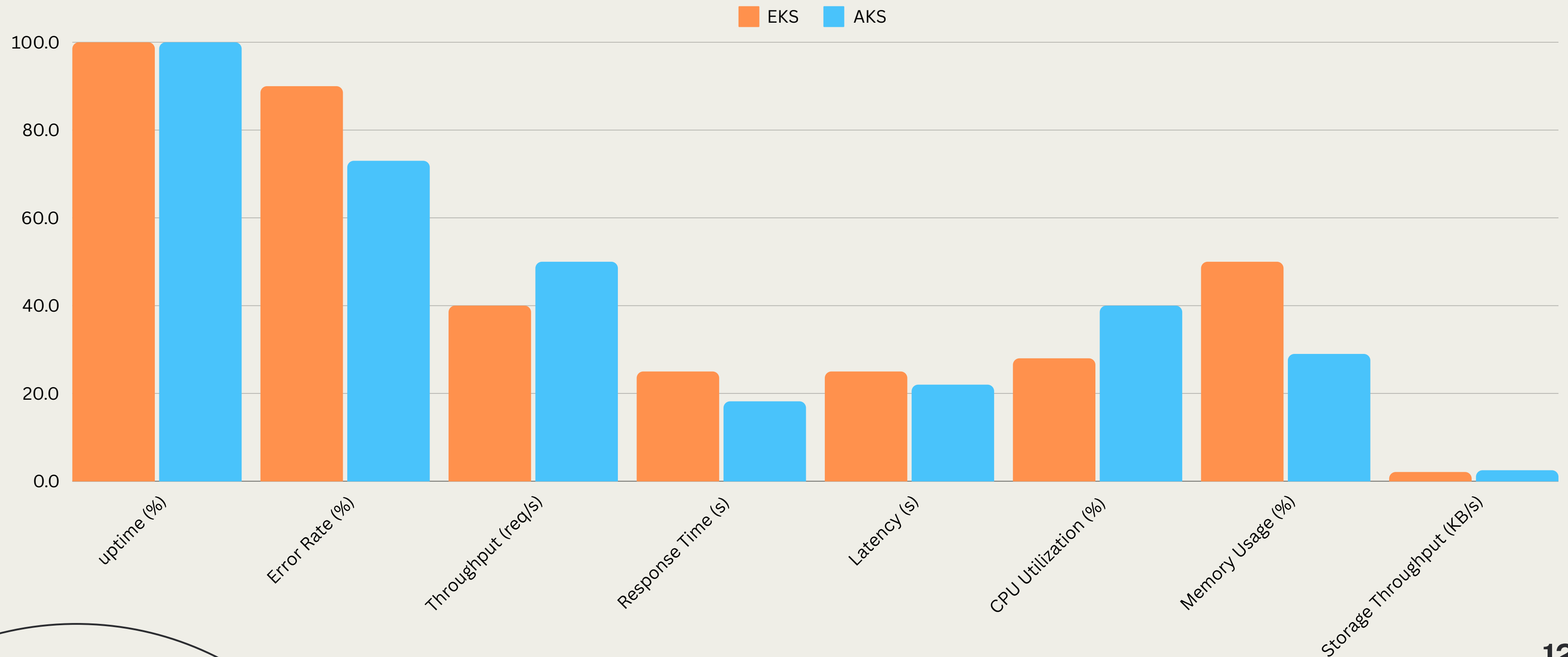
High Traffic (~1500 user)



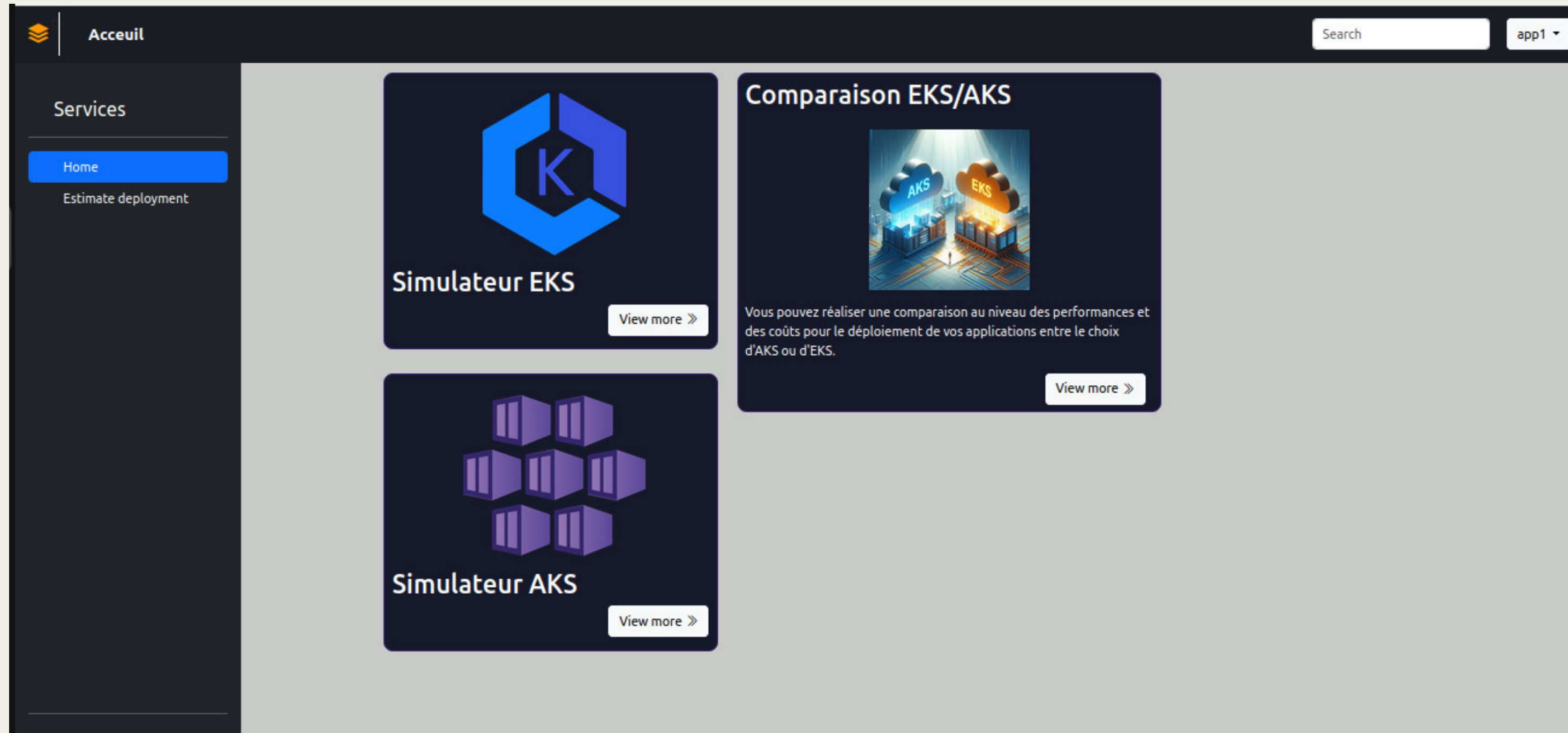
Performance/Testing:

Performance results

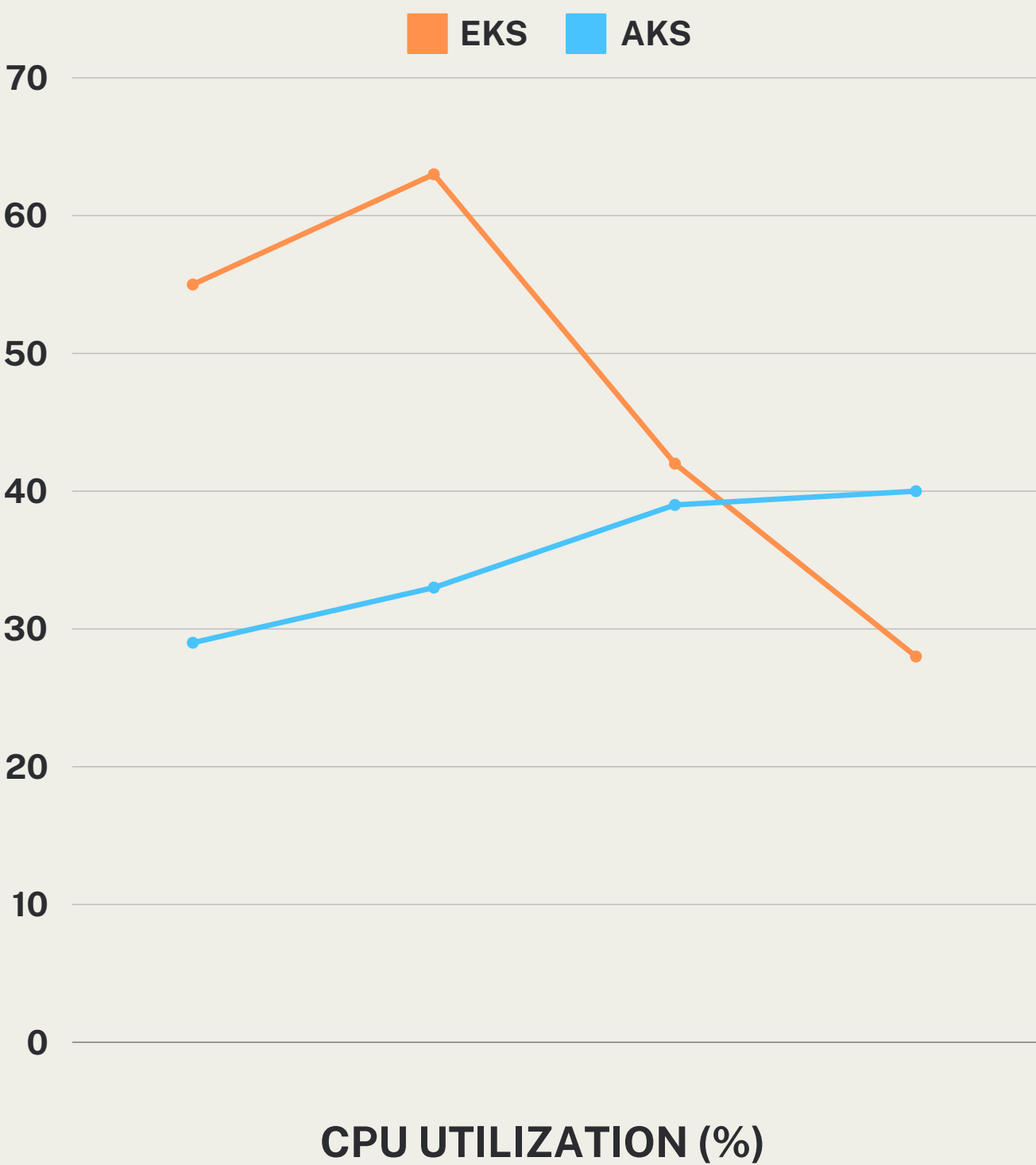
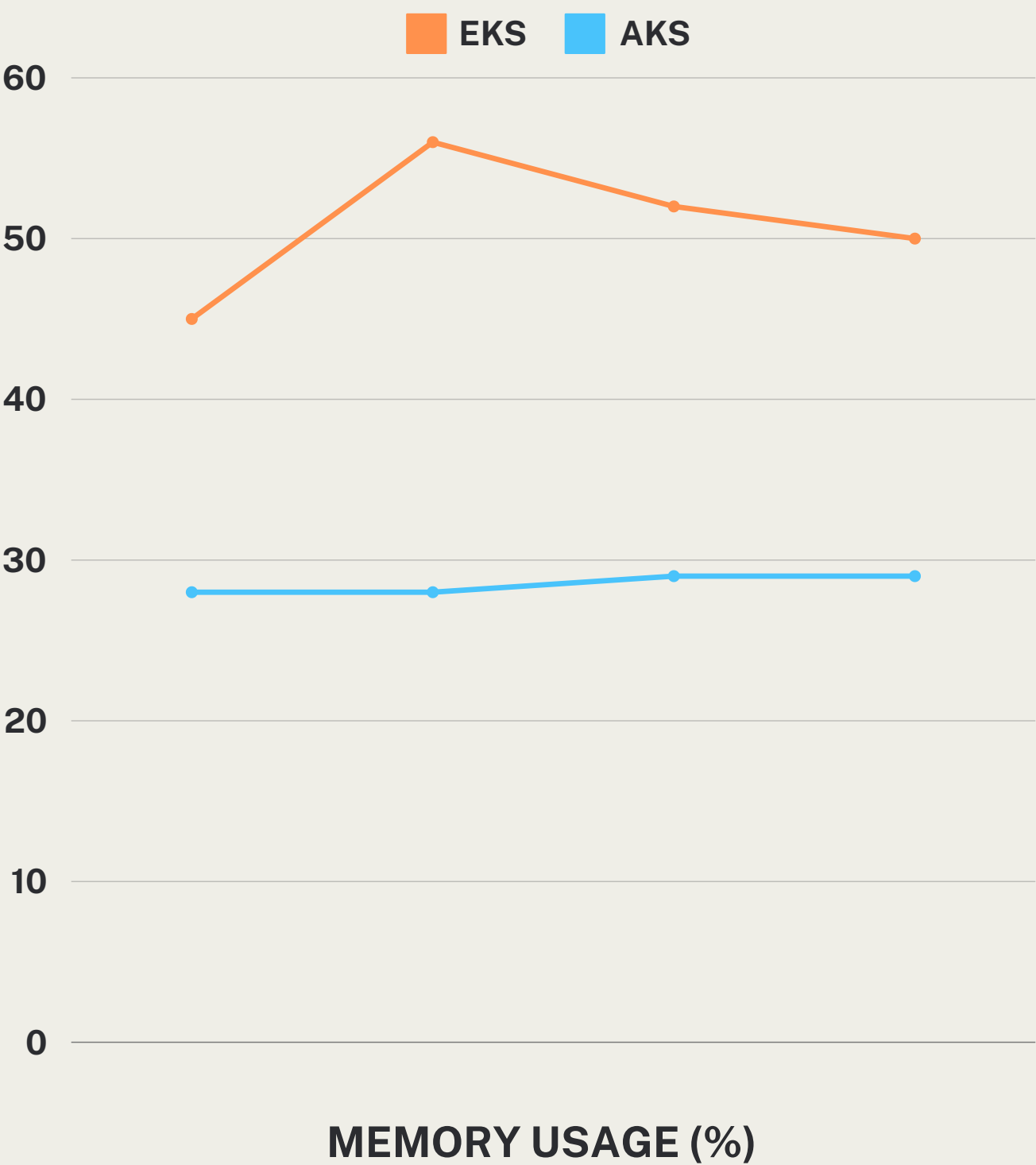
Very High Traffic (>~2000 user)



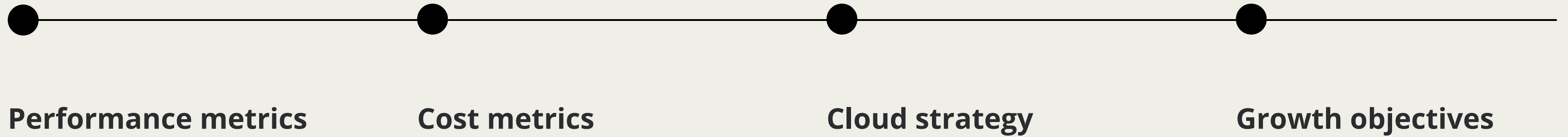
Simulation and Comparative Analysis of Cost Metrics



Interpretation of results



Conclusion



Jury members

**Thank you for your
attention!**
