Dynamic I/O Model Selection With Machine Learning

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Abstract—In a typical database and file system, using asynchronous I/O is generally a good way to optimize processing efficiency. However, asynchronous I/O may not a more efficient way in all situations. In this work, we use Machine Learning(ML) techniques to learn I/O model's performance, and set up a client/server system to recommend the more efficient I/O model under different system loads. The experimental result shows that our system has a 15% performance imporvment compared to using asynchronous I/O alone.

Keywords—asynchronous I/O, synchronous I/O, Machine Learning, performance prediction

I. Introduction

II. Design

A. Maintaining the Integrity of the Specifications

III. Implementation

A. Abbreviations and Acronyms

B. Units

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- Avoid.
- Do
- Use

C. Equations

$$a + b = \gamma \tag{1}$$

D. Figures and Tables

a) Positioning Figures and Tables: Place figures and tables at the top and

TABLE I
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[a]Sample of a Table footnote.

Fig. 1. Example of a figure caption.

IV. Evaluation

V. Related Work

VI. Conclusion

Acknowledgment

References

References

[1] G. Eason, B. Noble, and I. N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955.

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