

Motivation

Hindi, the official language of India, is spoken as a first language by 180 million people, and by many more as a lingua franca. In spite of this there has been a lack of viable TTS systems in Indian languages including Hindi, even though there is a huge scope for such a product. Most of the efforts in this field have been in the English language. There needs to be more effort for Indian languages, especially Hindi.

Features

MULTICORE:

Our TTS system works on an symmetric / asymmetric multicore architecture, like the Intel multicore processors and IBM Cell Broadband Engine.

DATA PARALLELISM:

In this paradigm we distribute our data amongst the various cores, which in turn converts it to pseudo human voice and returns it to the main core.

SPEED-UP:

Our TTS system gives us a performance gain over the x86 architecture.

PLATFORM INDEPENDENT:

Our TTS system can work on Multiple platforms such as Windows and Linux, and the output quality is fair.

Supervisor

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Architecture

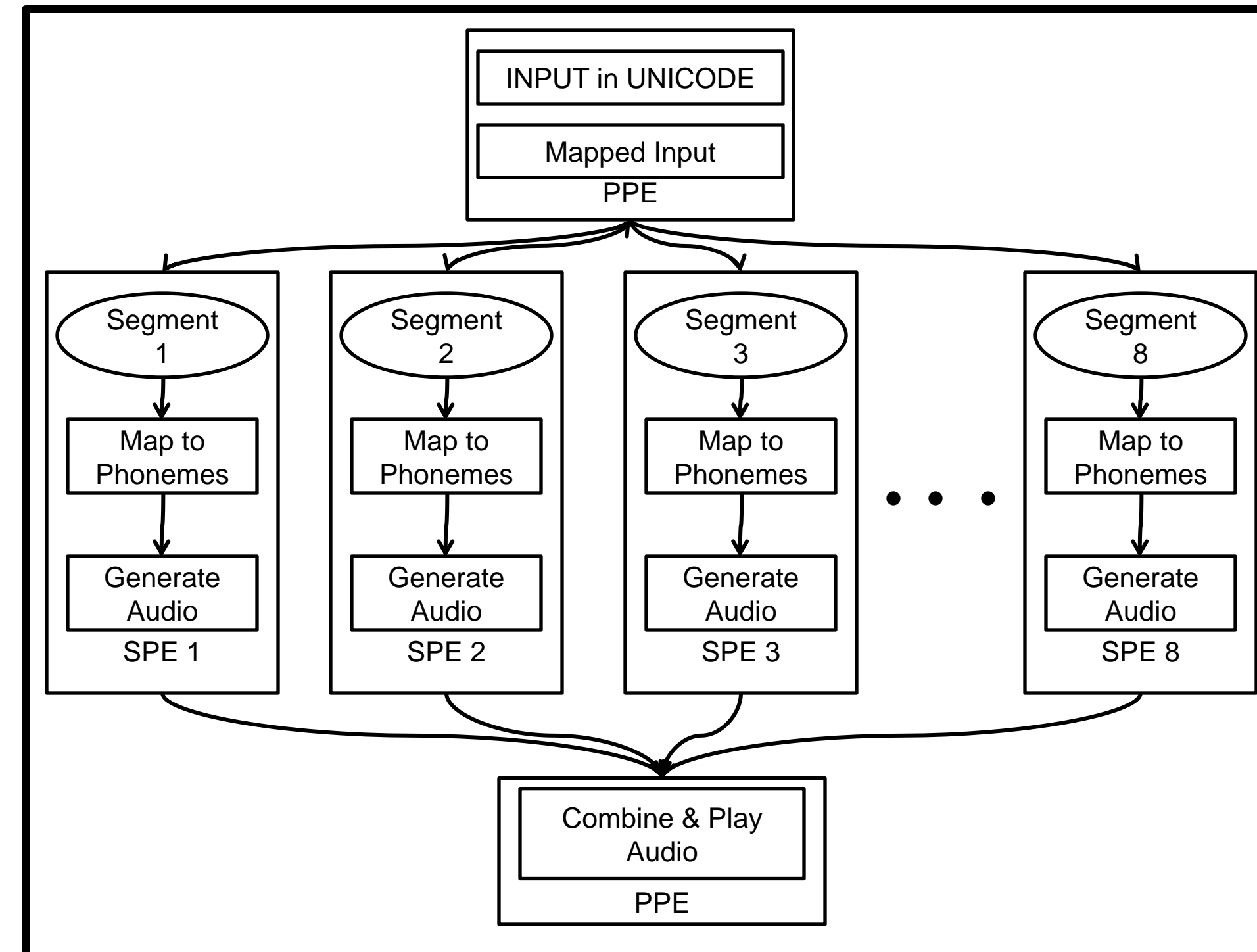


Fig. 1 Architecture of TTS system on a heterogeneous multicore architecture

Work Flow

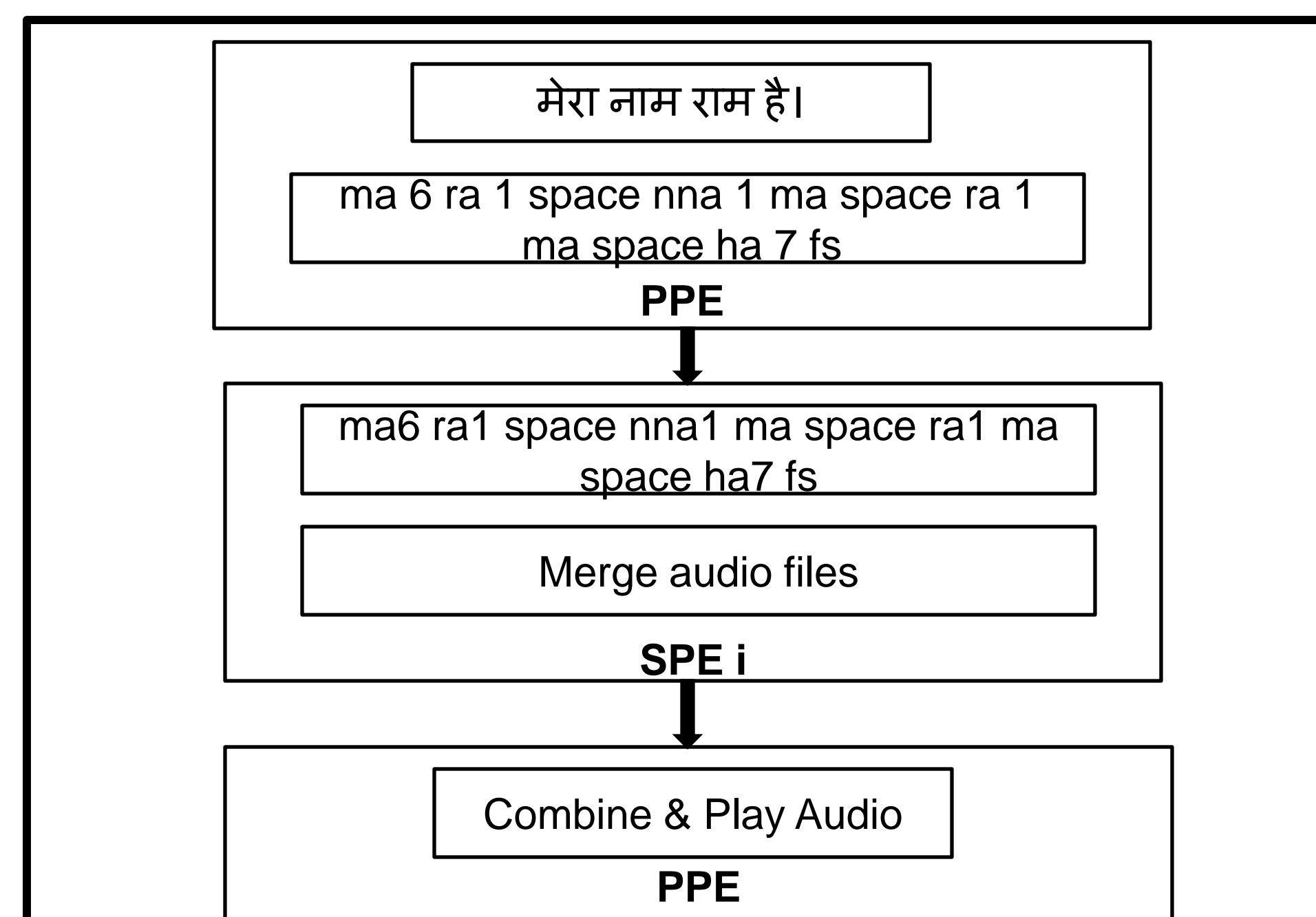


Fig. 2 Sample work flow of the system

Conclusion

For significantly large input size, CBE (heterogeneous multicore architecture) outperforms x86 architecture with respect to the total processing time.

This system can be used for many applications such as public announcements, automated responses and can be an aid for institutions meant for the visually impaired.

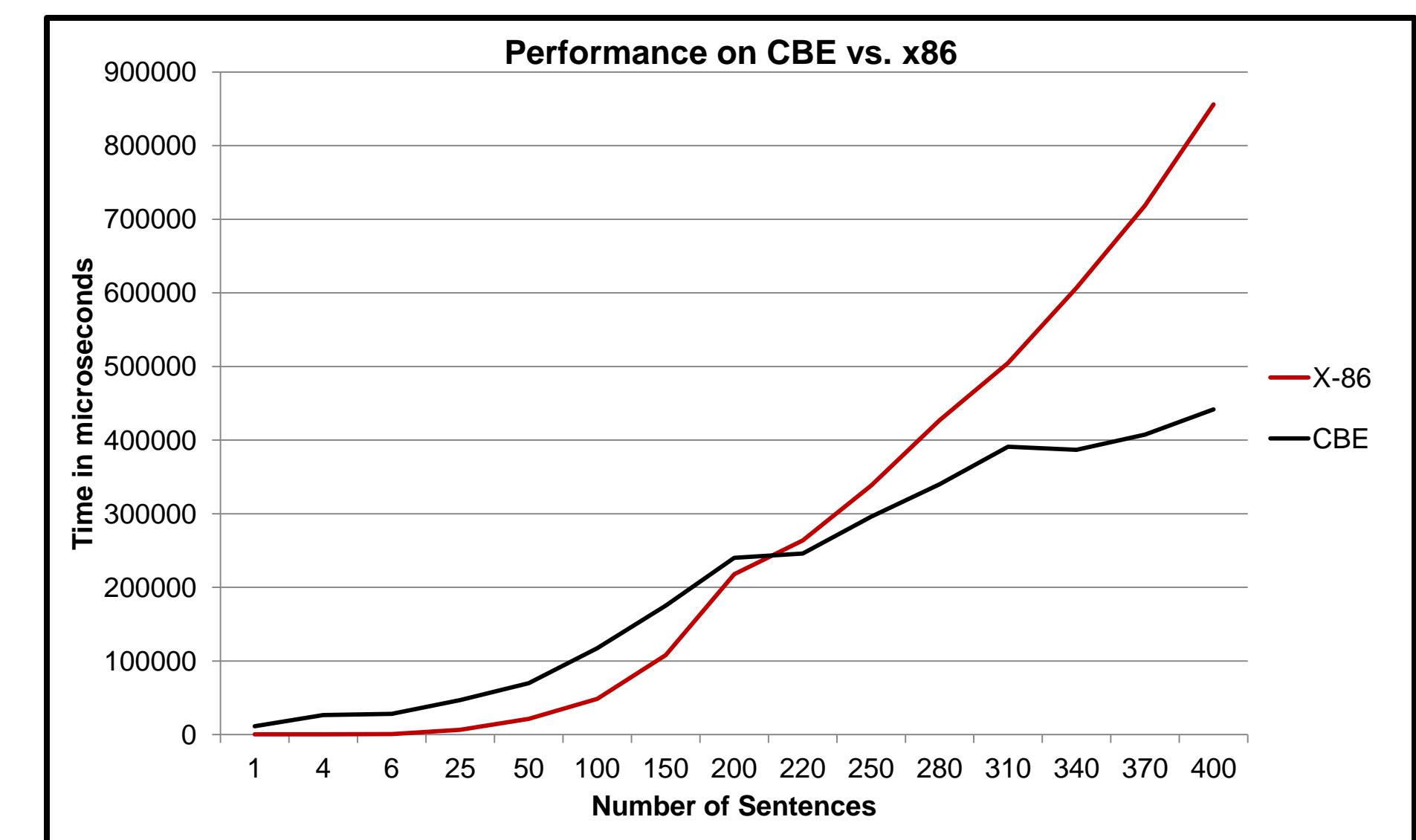


Fig. 3 Performance gain in CBE vs. x86

References

Introduction to Cell Broadband Engine Architecture, version 1.02. Sony Computer Entertainment, October, 2007.

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