Breaking Links: Evaluating distributed time synchronization for musical applications using Ableton Link

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Declaration

This report has been prepared on the basis of my own work. Where other published and unpublished source materials have been used, these have been acknowledged.

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Abstract

With the recent explosion of connected musical devices, the challenge of making these play "in time" with each other mounts against application developers and device manufacturers. Ableton Link[1] aims to provide robust, resilient musical synchronization using principles from distributed systems programming, in contrast to previous master/slave approaches. However the evaluation criteria for such a system are not well represented in the existing literature, with particular reference to a musical context. The following presents a system for empirical testing of the Ableton Link library using the Jepsen[2] testing framework, along with a set of criteria for evaluting similar libraries that may be developed in future.

Contents

1 Introduction

This is a sample section.

2 Background research

Research goes here.

3 Section three

4 Section four

5 Section five

6 Section six

7 Section seven

References

[1] Florian Goltz. Ableton link–a technology to synchronize music software. In *Linux Audio Conference 2018*, page 39, 2018.

[2] Kingsbury, Kyle. Jepsen - a framework for distributed systems verification, with fault injection, 2018. [Online; accessed 6-August-2018].