

for users to interact with the metaverse. However, understanding the performance of VR devices and their surrounding ecosystem in practice remains challenging due to the lack of publicly available system traces. In this work, we address this challenge by making an important step towards a publicly-accessible workload trace archive for metaverse systems. To this end, we design and implement *libnr*, a novel tool that partially automates the collection of system traces. Through real-world experiments, we validate *libnr* and study the behavior of two VR devices: the Meta Quest 2, the best-selling VR device worldwide, and the Meta Quest Pro, a state-of-the-art VR device designed for professional applications. Through our experiments, we find that play area placement can increase VR power usage by up to 1.9 W, and that streaming video to our VR devices with good performance requires at least 80 Mbps of bandwidth. Throughout our experiments, we collect a total of 11 input traces with a total duration of 40 minutes, and 112 system traces with a total duration of 7 hours.

This article is part of ongoing work on a workload trace archive for metaverse systems. To this end, we are working to add support for reproducibility packages to *libnr*, and are collecting traces for additional (types of) applications, VR devices, and deployments.

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