

ISIM: The Simulator for The Impulse Adaptable Memory System

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UUCS-99-017

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September 18, 1998

Abstract

This document describes ISIM, the simulator for the Impulse Adaptable Memory System. Impulse adds two new features to a conventional memory system. First, it supports a configurable, extra level of address remapping at the memory controller. Second, it supports prefetching at the memory controller. Consequently, two new units, a remapping controller and a memory controller cache, are added to a traditional memory system to support the new Impulse features. ISIM is based on Paint, a PA-RISC instruction set interpreter. ISIM extends Paint with a detailed Impulse memory system model which includes a primary data cache, a secondary data cache, a system bus, an Impulse memory controller, and a renovated DRAM backend.

Note that this document focuses on the Impulse extensions only. The reader should consult the Paint technical report [2] for an overview of the Paint simulation environment and terminology.

This effort was sponsored in part by the Defense Advanced Research Projects Agency (DARPA) and the Air Force Research Laboratory (AFRL) under agreement number F30602-98-1-0101 and DARPA Order Numbers F393/00-01 and F376/00. The views and conclusions contained herein are those of the authors and should not be interpreted as necessarily representing the official policies or endorsements, either express or implied, of DARPA, AFRL, or the US Government.