



Doctoral Dissertation Defense Announcement

Student's Name: William V. Thompson

Title of Dissertation: *Mass Storage System for Bare Machine Computing*

Date of Defense: Thursday, May 12, 2016

Time: 10:00 AM

Venue: 7800 York Road, 4th floor Conference Room 459

Abstract

This thesis deals with designing, developing, and implementing a mass storage system for bare machine computing (BMC) environment – without dependencies on operating systems (OS), lean kernel, or embedded OS. The bare machine mass storage system is based on FAT32 standard and designed for optimal performance. The FAT32 options implemented in this system are tailored for bare PC applications, but maintains interoperability with OS-based systems such as Windows and Linux. It further discusses the integration approach that extends the SQLite database transformation with this mass storage system and demonstrates the ability of the transformed SQLite database to interoperate between a standard OS and a bare PC system. Also, analysis of performance data collected illustrates the leverage of a bare PC system: SQLite on a bare PC performs much better than on Windows. The bare PC performance improvements are attributed to less overhead in the hardware interfaces compared to system calls in OS.

