

Title: Graphics Stack for HelenOS

Author: Petr Koupy

Department / Institute: Department of Distributed and Dependable Systems

Supervisor of the master thesis: Mgr. Martin Děcký

Abstract: HelenOS is an experimental operating system based on a micro-kernel multi-server architecture. Before the inception of this thesis, HelenOS already contained numerous modernly designed subsystems responsible for various system tasks. However, it lacked the proper subsystem for interaction with the user. While the input part of such subsystem was already in an advanced stage of development, the output part was just a quick and temporary solution in order to have at least some mean to populate the screen with information. This thesis deals with the creation of a proper graphics subsystem that would replace the temporary one. The resulting new HelenOS graphics subsystem is designed according to the state-of-the-art principles found within the problem domain. Although minimalistic, the initial implementation is highly extensible and already practically usable by the HelenOS developer community. The thesis covers all important parts of the graphics subsystem – graphic driver infrastructure, drawing library, graphics server and a toolkit for creation of application user interface.

Keywords: graphics subsystem, graphical user interface, HelenOS