



The **MaXX** Desktop

Workstation Environment

for Graphics Professionals

Revised Road Map

Version 0.7



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Introduction

This document will allow the reader to learn more about the MaXX Interactive Desktop mission statement, its new road map and the change of philosophy that MaXX Interactive is adopting in order to achieve its goals. A brave new world is the yet untamed market segment of the Linux Graphics Workstation Environment and MaXX Interactive is hoping to become the logical choice for CG Artists, Motion Pictures and Special Effects Studios, Game Developers, Visualization/Simulation, Virtual Reality power-users and Oil and Gas to name a few.

The MaXX Interactive Desktop, or **MaXX Desktop** for the acquainted, is the perfect Linux Intel Workstation Environment for Graphics and Mew-Media Professionals where maximum application performance is not an option. In today's ultra busy production environments, total control over system resources allocation makes all the difference in the world.

Our Mission Statement

The MaXX Interactive team has establish a set of realistic milestones that will allow them to get closer to their main objective, offering cost effective High Performance Workstation Environment to Graphics and New-Media Professionals on the Linux Intel platform.

This bold endeavor will be achieved by staying focused and by brining together the best expertise in the fields of Computer Graphics, software development and High Performance Computing in one big happy family. However, there is still something missing... The fun factor! This endeavor is very challenging and therefor, we must be able to have fun while working hard at it.

The following section explains each milestone that the MaXX Interactive team has established;



Software Development

At the center stage of the **MaXX Desktop** is the ability to quickly build high performance applications with modern programming languages such as C++ and JAVA. From real-time interactive graphics applications to problems solving production environments with CPU affinity, low memory foot-print, modern GUI and Enterprise class reliability built right in MaXX Interactive's Software Development Kits.

The MaXX Interactive Software Development Kit (Linux Edition) is mainly built around the Eclipse IDE where C++ and JAVA developers can build amazing applications. Carefully designed modules empowers software developers with the right set of tools to build modern and highly optimized applications with ease and simplicity. Each Software Development module is written in modern C++ with C and assembly low-level sub routines for maximum performance.

JAVA developers are very important for the success of the **MaXX Desktop** and therefor, building **MaXX Desktop** friendly JAVA application have never been so easy with the MaXX Interactive JAVA Software Development Kits. For every class in the C++ Edition of the SDK, there is a JAVA equivalent class that provides the same exact methods. This exiting capability is made possible with the JAVA Native Interface API (JNI) and with Trolltech's new Qt Jambi® technology. Qt Jambi® greatly simplifies the use of the JAVA Native Interface API by allowing developers to quickly leverage existing native code for maximum performance and cross-platform portability.

To learn more on JNI, refer to the Sun Microsystems JAVA website at:

<http://java.sun.com/j2se/1.5.0/docs/guide/jni/spec/jniTOC.html>

to learn more about Jambi, refer to Trolltech website at:

<http://www.trolltech.com/product/jambi>



High Performance Interactive Desktop Environment

The **MaXX Desktop** is in a nutshell an evolution of SGI's IRIX Interactive Desktop found on IRIX based systems. The end-user front-end provides an efficient icon-oriented interface to the Operating System underneath. The most important component of the **MaXX Desktop** is the file manager which assist the end-user in all file-related operations with a very intuitive environment. User can copy, move, delete, edit and print files by simple clicking or dragging them. It's even possible to access secured remote system with the same icon based interface.

At the heart of the **MaXX Desktop**, are proven technologies, a robust and extensible architecture design and two decades of pioneering high performance computer graphics expertise.

The result is a rich, intuitive and interactive Desktop Experience where users enjoys advance features that were previously available only on high-end expensive workstations. Several years of Research & Development were put in optimizing key components of the Desktop Experience and MaXX Interactive is proud to share that knowledge back to the community.

Here are some of the advance features that elevate the **MaXX Desktop** into a class of its own;

- 64 bit computing support
- Ultra slim hardware accelerated OpenGL GUI
- OpenGL based FX Composer (multi layers alpha blending and special effects engine)
- Resolution independent graphical user interface
- Interactive vector icons
- Modern Workspace manager
- GPU co-processor computation
- Smart CPU affinity
- Solid multi-head display support
- Low-level X Window hardware acceleration
- Overlay Planes making the Desktop snappy, super responsive and very lightweight with production applications
- Consolidated system and resources monitoring



Built for speed

Part of the mission is to work very closely with hardware vendors such as NVIDIA, 3DLabs, AMD and Intel in order to provide the best optimized environment for 32 and 64 bit computing that leverages all the capabilities of the underlying hardware. The end result is a highly tuned Desktop Experience that fosters creativity and productivity by giving you back control over your system's resources and helping you and your production class applications to be at their best.



Philosophy Change - Open Source and Commercial Marriage

MaXX Interactive is making a radical shift in the way its technologies and intellectual properties are managed by adopting an Apple inc. like philosophy where Open Source Software and Commercial software lives together in a happy marriage.

The **MaXX Desktop** software stack is composed of an Open Source Foundation that includes our contributed free Software Development Kits and a basic Desktop environment that everybody can download, install and run. The more seasoned users are welcome to modify the source code, enhance and/or bring new ideas or optimization paths to the table. However, new features are first analyzed, extensively tested before they are merged back into the main trunk. A QA process very similar to the Linux Kernel will be used to validate, test and merge code because the end user Desktop Experience, stability and performance are paramount to anything else.

The Commercial version of **MaXX Desktop** leverages the extensive testing and quick bug fixing abilities of its Open Source counterpart in addition to advanced features and optimizations that are better kept closed source for the moment. Some of those closed source features will be free and available for download in binary only format.

Technical support and end-user assistance however is only included with the Commercial version of **MaXX Desktop**. Additional technical support can be purchased for the Open Source version based on the number of seats.

MaXX Interactive will grant public access to its bugs and issues tracking system ensuring a totally transparent source code management.



5Dwm, The Window Manager

The 5Dwm window manager is an enhanced version of the Motif Window Manager or Mwm based on Motif version 2.1.30. 5Dwm works and behave like its brother, 4Dwm found on IRIX system. In order to allow GNOME and KDE based application to well behave under the **MaXX Desktop** environment, the window manager will be made GNOME and KDE friendly. The 5Dwm window manager supports SGI's landmark look & feel, colorful icons and advanced features like overlay planes which enhance application graphics performance and responsiveness. The 5Dwm window manager capabilities are extended by external GUI applications allowing the end-user to interact safely with the X Window System and to perform complex task with yet just a few clicks of a mouse. An OpenGL based Application and Workspace Selector is already in the work allowing smooth and very fast application and workspace selection.

A Look and Feel for every taste

The cool SGI look & feel on Linux

In order to maintain a true SGI Motif look & feel of applications running under **MaXX Desktop**, the standard Open Motif 2.1.30 rendering code has rewrote and optimized to support multi-screen, overlay plane and of course the SGI's schemes. The result is an amazing and very close replica of the original implementation found on IRIX. Also a new set of Motif widgets specific to SGI will be created to provide a true IRIX Interactive Desktop environment and to facilitate IRIX applications to be ported to **MaXX Desktop** more easily. One example would be the advanced file selection dialog box with a built in history list found in SGI's implementation.

Part of the SGI look and feel are the SGI Schemes that allow to customized the appearance of Motif while preserving maximum performance and responsiveness... Schemes allow you to provide default colors and fonts for your applications, while also ensuring that users can easily select other color and fonts according to their individual needs and preferences.

MaXX Modern Look and Feel



The **MaXX Desktop** Modern look and feel is the evolution of MaXX Interactive's vector GUI originally wrote in C and then ported to Qt C++ toolkit. It provides modern features like composition manager, alpha blending, transparency, layers, resolution independence and full OpenGL and XRender hardware accelerations. The **MaXX Desktop** Modern look and feel also supports schemes but also add the ability to change the way the Desktop Experience look and feel based on the user personality. Personality is MaXX Interactive's new personalization technology that allows to go further that regular themes by reconfiguring the widgets layouts, icon behaviors and presentation of different **MaXX Desktop** user interfaces. Eric Masson is writing a white paper on the subject and should be available before the end of 2007.