Subject: RSI Remains Committed to Mac OS X
Posted by info on Thu, 21 Mar 2002 20:15:58 GMT
View Forum Message <> Reply to Message

Research Systems Remains Committed to IDL and ENVI on Mac OS X

Last fall, Research Systems, Inc. (RSI) announced its intention to release a native version of IDL for the Mac OS X platform using X11/Motif graphics and user interface. When this announcement was made, we had completed a largely functional proof of concept port, giving us the confidence to go public with our plans. We expected to resolve some stability issues, hold an alpha/beta test period to get user feedback, and then release the result as a fully supported IDL platform. We fully expected to be nearing completion by spring.

The IDL community has been patiently waiting for us to complete this work. There has been speculation as to when RSI will release the final product. Our silence on the subject is due to a desire to complete the work before speaking publicly about it.

In fact, we have had a largely complete port of IDL for this platform since late last year. It is fully integrated into the IDL source code, and has been building and passing regression tests successfully as part of our nightly builds for months. However, our progress towards a releasable product has been stalled by frustratingly slow progress in resolving some stability issues involving the underlying X11/Motif user interface components. We want you to know that we continue to work on these issues, and expect to resolve them. Only then will we release IDL for the Mac OS X platform.

RSI will evaluate how to handle maintenance for Macintosh users and make extensions or credits as appropriate.

We appreciate your patience and support. Below are more detailed answers to some common questions that people are asking about IDL for Mac OS X.

Q: Why Is IDL For Mac X based on The X Window System and not Aqua/Quartz?

The cost of supporting a platform is largely based on the amount of unique code, documentation, packaging, and support required for it. By using the X Window System user interface and graphics APIs, the cost of supporting IDL on this platform is greatly reduced. The costs become similar to those of any other Unix platform.

We believe that the IDL Macintosh user base is large enough to sustain this version of IDL, and that it will be of high quality.

Q: Is It A Native Port?

It is a native port in the sense that it is compiled on the system, and runs natively without any emulation. There is no use of the Mac Classic environment, or of the Carbon APIs. The look and feel are not fully "native", but will be familiar to any Unix user.

Q: What Does It Look Like?

It looks like IDL on any other Unix platform. The user interface has a Motif look and feel. The X Windows created by IDL appear on the OS X desktop, along with all other windows, and there is no special effort required to move between them.

If you've ever used a Windows PC with X server software to display Unix IDL output on your Windows desktop, the effect is similar.

Q: You Announced That You Will Be Using The Tenon Xtools X11 Package. Why Not Use The Free XDarwin, And Do You Have Plans To Support XDarwin?

As you probably know, both of these packages are based on the same underlying XFree86 X11 software. There are advantages and disadvantages to each relative to the other. We have not made a final decision on this matter. Rather, we are currently working with both, and will end up using the one that works best with IDL. There are advantages and disadvantages to each, and we have encountered issues with both.

The Tenon version offers some compelling benefits for IDL users and for RSI:

- Single point of contact for support for customers. Most of our customers do not wish to become involved in X11 code development. Tenon delivers a single point of contact for installation and support. This is similar to the role that Red Hat plays in the Linux community. There is always room for those with specialized skills to play with these things, but we believe most of our users simply want a simple stable solution that works.
- Motif: IDL needs this, and the Tenon package has it integrated.
- Hardware OpenGL support: Tenon has support for using the native hardware GL support, and it is very fast. XDarwin's

current support is build on top of Mesa (pure software).
- Single point of contact for RSI. We are not in the X11 server maintenance business. We need a stable platform to base our software on.

Given the common underlying source for both Xtools and XDarwin, we believe that with some effort, IDL built for one of them should be able to work with the other. However, this is not something that we will be pursuing initially, largely in order to concentrate our limited resources on getting IDL for OS X working. Over time, it is a possibility that we are not ruling out.

Q: So, What's The Holdup?

We have encountered instability with programs that make heavy use of Motif widgets. Non-widget graphical applications run all day without problem, but programs that employ UI crash randomly. At this time, we are not sure exactly where in the X Windows code the problem lies, but we continue to work with Tenon to isolate and fix it.

In searching on the web, we see evidence that others are having similar issues, both with Tenon and XDarwin. IDL's use of widgets is especially heavy, so it seems to have more problems than simple demo programs.

Q: Is There A Command Line Version of IDL on Mac OS X?

Yes. As with all Unix platforms, IDL for Mac OS X can be run as a stand alone tty based command line program, or with a full IDE. Furthermore, the command line version should be fully compatible with the popular emacs idlwave mode.

Q: Are There Any Advantages To The Use Of X11 Graphics And UI?

There are some benefits to the use of X11:

- User familiarity with other Unix IDLs make it easy to move between platforms.
- You can run IDL on a Mac and display the graphics on any X display on the network. Similarly, X support allows you to display graphics from another system on your Mac.
- As a Unix platform, IDL for Mac OS X is installed and managed like any other Unix platform, and Unix IDL installations can support multiple architectures, including Mac OS X. It is trivial to maintain a single network

wide installation of Unix IDL, including OS X.

Q: Disadvantages?

IDL's user interface does not have the native Aqua/Quartz appearance. Whether this is an important disadvantage is a decision that only you can make. However, there are no significant functional disadvantages to IDL on Mac OS X relative to other Unix platforms.

Q: Is This A Stable Long Term Strategy?

We believe that it is. There is a great deal of X11 based software than can run under Mac OS X with minimal porting effort if a solid X11 implementation is available. Much of this valuable software will never be re-written for the Mac Aqua/Quartz toolkit, but would be very valuable on the OS X platform. We believe that this general need creates an obvious vacuum that will by necessity be filled.
The Tenon and XDarwin projects are both making progress on this goal, and once they achieve stability, we expect it to be dependable and long lived. For us, the question is more "when" than "if".

Q: What Is IDL Performance Like On Mac OS X?

Numerical performance is, not surprisingly, about the same as under Classic Mac OS, and is quite respectable. General graphical performance is good, and about like any other application running on the same system. File I/O is much faster then Classic Mac OS, and is comparable to other Unix platforms. OpenGL based graphics are impressively fast --- as good or better than any platform we have daily experience with.

Q: Does IDL for Mac OS X use OpenGL? Altivec? Multiple CPUs?

Yes to all three.
The Tenon X server supports OpenGL, and IDL uses it. Performance is quite good. Altivec is supported, to the same extent as with Classic Mac IDL (basic numeric operators). Multiple CPUs are employed by the IDL thread pool to speed numeric computation.

Q: Will IDL for Mac OS X have <your favorite Unix feature>?

For all practical purposes, Mac OS X *is* Unix. Therefore, you should expect everything to work as you would expect it to on a Unix system.

Q: What Do RSI Engineers Think Of Mac OS X?

Our initial impressions are favorable. Our Unix-savvy developers are impressed by the fact that there is a real and complete Unix under the fancy user interface. IDL runs well on the system, and we think that it will appeal to people who appreciate having a sophisticated user interface along with full access to the powerful Unix command line. The availability of Microsoft Office offers the possibility that a single machine could be used for both productivity applications (Word, Excel, Mail) and more traditional Unix uses (such as scientific computing). Some people who currently have two computers on their desks might find this especially appealing.

Other than the issues with the Motif toolkit, which we expect to resolve, the port of IDL to OS X was straightforward, and we believe that Unix users will have little problem moving their own programs to this platform.

Q: What About ENVI on Mac OS X?

RSI also remains committed to releasing ENVI for Mac OS X. Obviously, we will need to finish IDL for Mac OS X first, and then test ENVI on the new IDL port. Once IDL is tested on Mac OS X, we anticipate very few problems porting ENVI to Mac OS X. We expect that the ENVI Mac OS X release will quickly follow the IDL Mac OS X.
