Win Mac 2008 Linux

# Preserving Software Investments with Providence Software's XVT Cross Platform Portability Suite

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WHITE PAPER

Technology Executives are facing complex choices when selecting IT platforms

Over the last 15/20 years, Fortune 1000 companies have focused on standardizing their IT infrastructures for many reasons:

- To reduce capital investments and maintenance costs needed by IT software and hardware solutions
- To reduce complexity of IT environments
- To improve the integration of applications and realize higher business benefits
- To reduce employee training costs
- To manage IT employee skill set requirements in a strategic manner.

70% of corporate data resides in legacy Systems.

The industry platform standardization efforts have resulted in significant investments in software development and the development of many applications

in C and C++; until Java, these programming languages were the de facto standards because of their compiled performance and their usage in building Windows & Unix kernels (broad acceptance).

Organizations now have established very robust application portfolios that are used to solve daily problems and successfully address customer demands. Consider that as of today, most (> 70%) of the corporate data that is relied upon by organizations to conduct their business

It is not uncommon for the maintenance of legacy applications to consume 75% of IT budgets. resides in legacy systems. Nine out of ten ATM transactions are handled by such systems, some of them written over 25 years ago. Clearly, given that legacy applications are

able to address business needs, they are not going away any time soon. It is not uncommon

for the maintenance of legacy applications to consume 75% of IT budgets.

There are many incentives to upgrade or replace existing systems, such as the reluctance of vendors to support their products beyond a couple of releases due to system interoperability issues and eroding knowledgebase, thereby preventing the maintenance of legacy applications. The attractiveness of enjoying the latest technological breakthroughs or the need to integrate heterogeneous systems creates other incentives. Further adding to the equation, federal and state regulatory bodies mandate new compliance rulings that cannot be provided with existing systems; a good example would be the recent Sarbanes-Oxley regulation.

But it seems that the peace of mind that results from knowing that the business is running smoothly, even when obsolete and poor quality systems are used, is hard to resist; the tipping point is when it becomes more painful to continue doing business as usual than maintaining the status quo.

It is therefore not surprising that to access mission critical information, retain competitive edge in the context of changing business environments and deal with the constant evolution of the technological landscape, CIO & CTO are forced to consider the migration of applications to yet new platforms (Java, .NET, Linux). In doing so, they must contemplate large development costs, disruptions of business operations, change with regard to management issues, and possible negative impacts to customer satisfactions as new solutions get "ironed out."

If hesitancy is in order, it is justified—until you consider the low cost, low risk migration paths

for C/C++ solutions provided by Providence Software Solutions.

# INDUSTRY LANDSCAPE

Today, the development of software requires a significant level of commitment by requiring organizations to adopt specific development infrastructure processes that are tightly linked to

Today, the development of software requires a significant level of commitment particular vendor platforms or proprietary operating systems. This situation results from:

• The availability on each platform of compre-

hensive development capabilities that support all aspects of development

- The complexity of development environments that require specialization
- The difficulties in integrating disparate environments that increase project costs

Although standardizing on a given platform provides significant benefits from an operational perspective, commercial developers limit their market opportunities, and large internal IT groups face colossal integration challenges due to the diversity of infrastructures that they have inherited, and the need to maintain "legacy" applications.

Technology executives are facing complex choices when selecting IT platforms: Java, Unix (HP, IBM, SUN), Linux (RedHat, SuSE), .NET (Microsoft) and OS/X (Mac).

**Java** - Java has become the de-facto standard for developing cross platform applications for the following reasons:

 Creation of an industry consortium that is lead by Sun Microsystems and IBM

- Definition of a run time environment that is platform independent and well specified, allowing hardware vendors to port the run time environment to their platforms
- Availability of a large number of libraries, most of them in an open-source fashion
- Recent availability of automated translation tools which are very efficient at translating legacy Cobol / AS400 application code into Java



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If Java is now available on most hardware platforms, its "interpreted" approach suffers from performance drawbacks, and its promise of platform independence falls far short of expectations. The cost of rewriting applications, particularly non object-oriented applications written in C, are essentially the same as the costs associated with new developments, given that applications need to be re-engineered and need to go through formal testing.

## Unix

Because of a lack of standardization, Unix, which appeared ready for explosive growth at some point in time, has been reduced to serving limited application domains where numerical computations dominate.

## Linux

Under the leadership of Sun & RedHat, the open source community has gained a tremendous amount of industry support (IBM, Dell) during the last 5 years. There are now many software devel-

The Open Source community has gained a tremendous amount of industry support opment companies whose business model is centered on the exclusive usage of open source tools and libraries written in various languages (C, C++, Java, Python, Perl, etc.).

Major corporations are also starting to strategically deploy Linux internally for the following reasons:

- Robustness of applications, particularly for network / web applications
- Low licensing fees
- Availability of experienced resources in the marketplace

Usually, applications originally written for the Unix world can be ported to Linux without too much effort, which explains the growth of Linux at the expense of Unix.

## .NET

Several years ago, Microsoft responded to Java's market acceptance with its own similar development .NET platform. The fundamental difference between Java and .NET is the fact that .NET targets the WinTel platform exclusively (which enjoys market leadership) but supports the seamless integration of applications written in a variety of languages (about 20+ languages are now available).

Clearly, for applications developed in the Windows environment, the .NET framework provides an unprecedented opportunity to integrate disparate applications and enable co-development in a most productive manner. Early results have confirmed 20% to 40% productivity improvements, in part due to the availability of a single source extensive programming library.

The language of choice in .NET is C# which combines the best features of many existing languages and provides direct support for modern application design. .NET presents some key benefits:

- Ability to integrate previously interfaced or standalone applications
- Reduced integration costs
- Ability to extend the life of legacy code by porting it to the .NET platform in their native language

Although the .NET platform is relatively new, it is growing steadily and rapidly.

## Mac

Although the Mac has become a niche market and is using a variant of the Unix operating system, it has a dedicated, loyal and vocal following that swears by its products. The Mac has been leading the way in niche industries, such as document composing for media companies, where solution providers have invested large amounts of capital. For some development organizations, being able to provide applications on the Mac is the key factor in establishing their leadership.

# LEGACY MIGRATION CHALLENGES

Although structurally similar programming languages and libraries are used on all these environments, developing applications that run on all

Cross Platform application development and migration is key to investment protection

platforms or migrating existing applications from one platform to another, are complex, challenging and costly tasks that few organizations undertake on their own. The chal-

lenges that must be addressed include:

- Older applications that did not embody structurally sound object-oriented and 3-tier (presentation, business and data) layered architectures: this forces re-engineering of applications
- The business knowledge that is no longer available as people have moved on to new and better projects: this renders the understanding of the business logic both time consuming and difficult, and leads to new code with incorrect functionality and poor quality
- Original development tools and documentation that are no longer supported or available: this makes the analysis and enhancement of legacy programs difficult at best
- The old functionality which does not support new business models that are desired (such as on-line functionality)

From a more technical point of view, the porting of applications from one platform to another presents additional challenges:

Functionality coverage of each platform: any new functionality that is not available in one platform must be re-implemented in the new one

- Native look-and-feel: the new application should look the same as other applications to foster user acceptance
- Native Performance: the new application should run as fast as other native applications
- Extensibility: any new platform should support the addition of third-party add-ons in a seamless fashion

# **OBJECTIVES**

Consequently, when migrating legacy applications, the following business objectives are usually sought:

Convert applications with minimal risk and low cost using XVT

- Achieving a safe, risk-free rapid transition
- Preserving IT investments and assets through the re-use of business logic
- Deployment on the latest computer platforms and development environments
- Integration with new applications
- Achieving compliance with new industry standards
- Transition to an open platform

With the proper technology Xvt Provides low and partner, these objectives cost. low can be achieved.

risk migration paths for C/C++ solutions

#### SOLUTION

Providence Software Solutions provides a way to migrate C and C++ applications to the latest platforms with minimal risk and low cost using its XVT product suite.

XVT Development Solutions combine a visual development environment with an extensible C or C++ Application Program Interface (API).

General features include:

- Visual programming to foster quick learning, ease of use and faster development
- Rapid Application Development (RAD) and prototyping
- Single source code portability across all supported platforms
- An API that calls native windowing system functionality so applications are both portable and native
- Native GUI look and feel
- A wide selection of reusable GUI objects
- High performance: the thin interface layer between the XVT API calls and native libraries results in no degradation of performance
- The ability to incorporate custom controls to take advantage of company existing assets (open architecture)

For applications that were not written using the XVT product libraries, application migration involves:

- Maintaining existing and critical business logic (preservation of past investments)
- Replacing the visualization logic with XVT library calls to enable the application to run in a standalone or a client/server structure on any leading platform
- Addition of new functional enhancements

For existing XVT applications, the migration process involves:

- Upgrading the XVT framework to the latest release
- Porting the application to the latest release (usually a few weeks of effort)
- Addition of new functional enhancements

A key point is to understand that when the application has been developed and tested on the development platform, the deployment of that application on any supported platform is done through simple recompilation. Because the XVT product is very robust, organizations usually dispense with the QA process on any deployment platform.

# BENEFITS

The benefits of using XVT products to migrate your applications are numerous and include:

- Preservation of application development investments: the effort to port your application is minimal and the proven business logic remains intact
- Broader market access: with our supported platforms, you are able to reach 80% of the market
- Higher revenues and profits: once your application runs on one platform, simply port it to other platforms to increase revenues and significantly increase your profits
- Quick time to market: XVT is the most robust tool on the market (it does what it is supposed to do exceptionally well); this enables you to focus on the customer problem and deliver working applications quickly to your customers
- Lower development costs: your development efforts are spread across all your deployment platforms; you do not have to rewrite applications for other platforms
- Lower knowledge requirements: as a developer you only need to be an expert on one platform - the one you use to develop your application
- Higher productivity: you choose the development platform that you know best and maximize your throughput.



In addition, Providence Software experts are available to help companies by providing training, consulting, maintenance, and support services.

In some cases the benefits go beyond original expectations. In one instance, one XVT customer spent \$150K to port its application when a new development would have cost \$1M. In investment terms, this represents almost one order of magnitude less than that which would have been required to rewrite the application.

Many XVT customers are using applications developed over ten years ago. By doing so, they have reduced their cost of ownership to the point where XVT applications generate profits that are used to fund new developments. With superior Return On Investment (ROI), lower Total Cost Of

# Typically, we can do a port for you in 3 to 7 days

Ownership (TCO) and business success, XVT customers are able to look at the complex land-scape with serenity.

Upgrading Existings XVT Applications

We'll be glad to sign a standard, Non-Disclosure Agreement with you to get started. Then we'll need a copy of your source code. We'll run that on the targeted version and on the targeted environments. From the resultant list of issues, we'll be able to give you a quote on the amount of effort required. The effort will be a combination of the following factors:

- Number of versions your product is behind (usually about 20% of needed effort)
- Changing from 16 bit to 32 bit, or from 32 bit to 64 bit (usually about 50% of needed effort)
- Changing compiler (usually about 30% of needed effort)
- App size--raw number of lines of code (multiplies effort)

# GETTING HELP

If you have either XVT applications or straight C/C++ applications that provide value to your organization, contact PSSI to find out how to leverage your application portfolio and provide better solutions to your customers at far lower costs than you expect.

Whether your need is to move an older, existing XVT-based application up to a current version, or to re-engineer an existing, single OS application to run in multiple environments, our expertise and experience can make this painless for you.

To contact Providence Software Solutions, send an e-mail to sales@XVT.com or call (919) 854-1800 and ask for Sales.