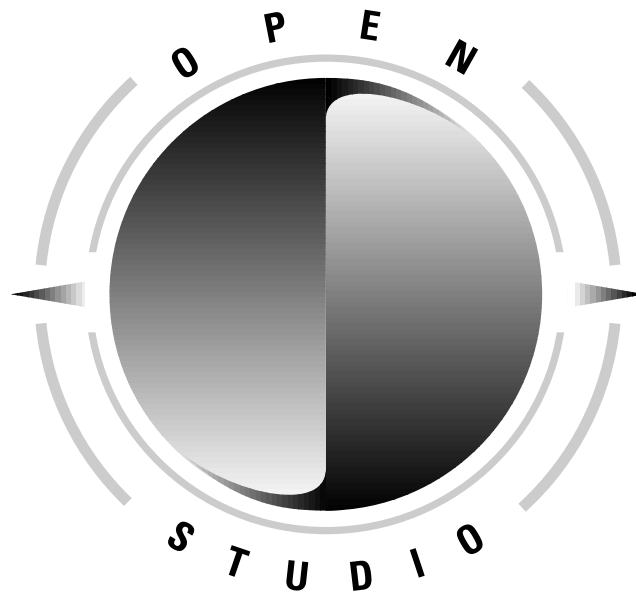

Software Development in a Mixed Windows®/HP-UX Environment Using HP SoftBench OpenStudio



Overview

As your organization moves to a heterogeneous environment, programming on both Microsoft® Windows® 95/Windows NT® and UNIX® platforms, your developer group will face several challenges. This white paper outlines those challenges, including:

- What you should expect as you move to multi-platform development
- How you can make this new multi-platform environment work to your advantage while supporting your organization's objectives
- Introducing a new tool from Hewlett-Packard Company that can help you succeed with multi-platform development

Critical Challenges When Developing in a Heterogeneous Environment

Tool Availability.

Which tools are available to develop across two platforms? Can you have a uniform development environment for both platforms or will a separate tool set be necessary for each platform?

Software Design.

To take advantage of the mixed environment, it may be necessary to re-design your applications. What changes in design are necessary when moving from a homogeneous to a heterogeneous environment? Is it possible to leverage these design changes to re-architect the application (for example, to take advantage of a two- or three-tier architecture)?

Open Architecture.

Your needs will certainly change in the future. To adapt to both anticipated and unplanned changes, you'll need an open architecture that can take advantage of various libraries, tools and APIs. Which architecture will enable your new applications to easily change? What APIs should be used?

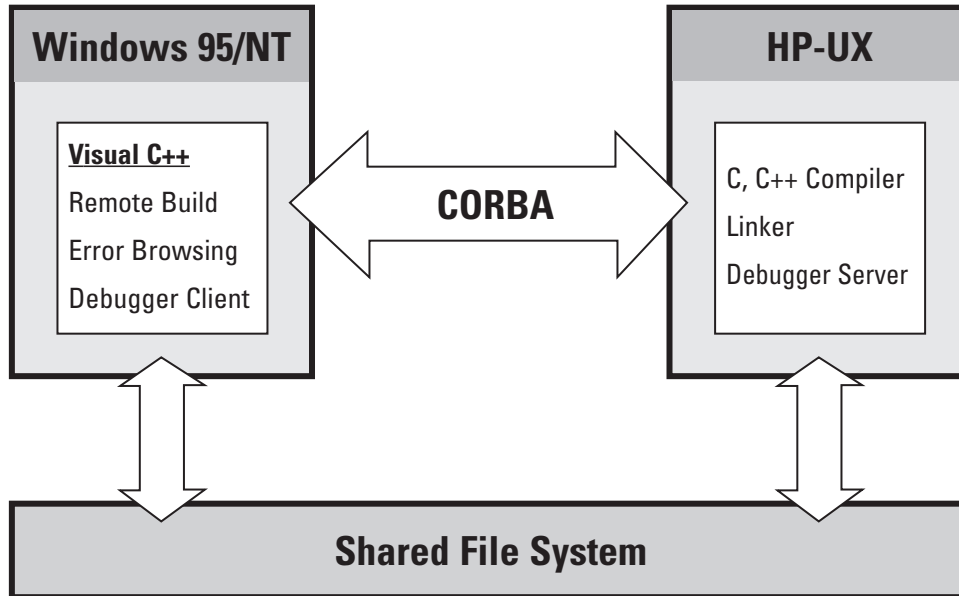
Training Cost.

Efficient development in a heterogeneous environment requires proficiency on different platforms. This includes training your development staff in two different environments. How do you minimize downtime as you move to the mixed environment?

Systems and Administrative Support.

Will staff have to be added to support the mixed development environment? If so, how many people and at what cost?

SoftBench OpenStudio



Seamless development in a mixed Windows 95/NT with HP-UX environment.

HP SoftBench OpenStudio is a software development tool designed to benefit developers who write applications for both Windows 95/NT and HP-UX environments.

OpenStudio combines Microsoft® Visual C++ with state-of-the-art distributed computing technology from Hewlett-Packard. This combination provides a single environment to develop applications for both Windows 95/NT and HP-UX.

HP has taken critical components for HP-UX development, including the C++ compiler, linker and debugger, and tightly integrated them with Microsoft Visual C++. As a result, programmers can use OpenStudio to edit C++ source code on a PC, then compile and debug this code on an HP-UX system.

OpenStudio is another member of the HP SoftBench family. As such, it is completely compatible with HP SoftBench. Developers are free to use SoftBench on the UNIX desktop and OpenStudio on the NT desktop.

OpenStudio addresses principal user needs.

Portable Applications.

With OpenStudio, compiling, linking and debugging code on both HP-UX and Windows 95/NT platforms is as simple as changing an option in a list box. You can edit one body of code and build it on both platforms from the single environment.

This capability provides the cornerstone of OpenStudio's value. When used in conjunction with Hewlett-Packard's software partners, this feature allows a highly efficient development of multi-platform applications.

Client/Server Applications.

Client/Server applications are typically split into two or three separate executables. These executables communicate using middleware technology, such as CORBA or ActiveX. OpenStudio lets you quickly change platforms by simply adjusting configurations. Client code can then be easily built for mixed Windows/UNIX deployment, while server code can be built for deployment on HP-UX. Both sets of source code can be stored within a Microsoft Visual C++ project. When the code is compiled, debug sessions can run simultaneously on the client and server applications.

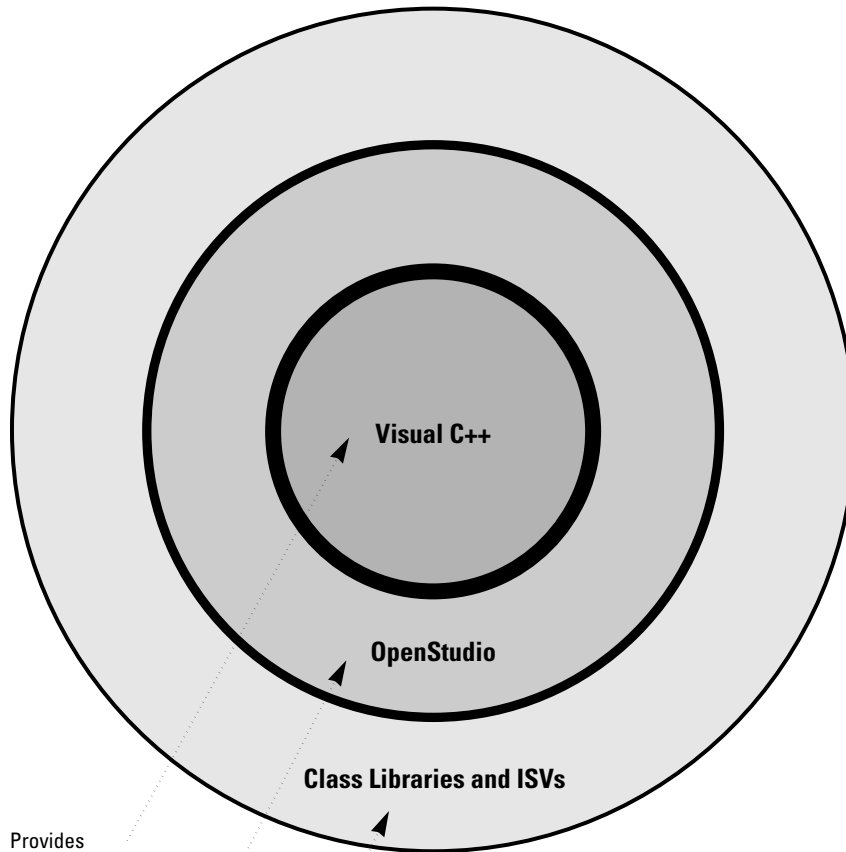
New HP-UX Applications.

With OpenStudio, you can generate an HP-UX application or library from scratch. Compiles and links can be initiated from OpenStudio, any errors browsed, and the target debugged.

Legacy HP-UX Applications.

To minimize transition costs to the new environment, OpenStudio allows existing HP-UX applications to be built and managed from a Windows platform. You can leverage existing build systems (makefiles, shell scripts, etc.) from OpenStudio. The build system runs on HP-UX; thus, the executables are created for HP-UX with build results displayed on the PC.

OpenStudio in a Mixed Development Environment



Provides fundamental C/C++ development capability.

Extends Visual C++ to compile applications on HP-UX.

Provides high-level API support.

OpenStudio effectively addresses critical issues in mixed-development environments.

Time to Market.

OpenStudio efficiently manages time to market, despite developing to mixed platforms. It allows developers to write applications just once, which creates a significant competitive edge.

Training.

OpenStudio is easy to learn because it's based on Microsoft Visual C++. Many third-party training and instruction texts are available on this environment. Developers will train in only one development environment.

Tool Availability.

OpenStudio is compatible with nearly any C++ application. Hewlett-Packard has partnered with respected third-party developers such as Bristol, Ilog and Rogue Wave. Partners were selected based on their strengths in database connectivity, multi-platform GUI development and high-end 2D graphics capabilities.

Open Architecture.

To adapt to both anticipated and unplanned changes in your future needs, OpenStudio's open architecture will work with various libraries, tools and APIs. Because of this open architecture, OpenStudio helps with building open, scalable applications. This ensures that, as new capabilities become available, OpenStudio can allow a smooth transition to these new features.

Systems and Administrative Support.

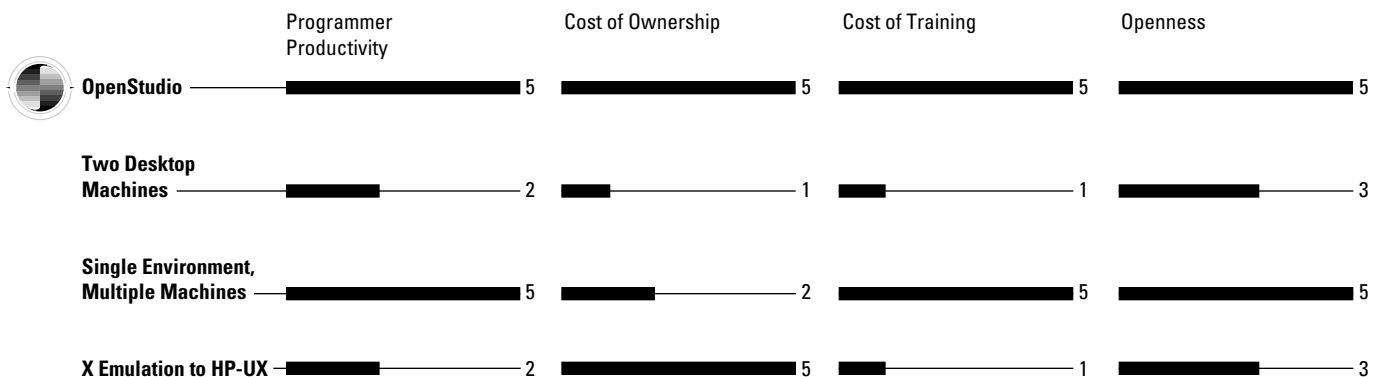
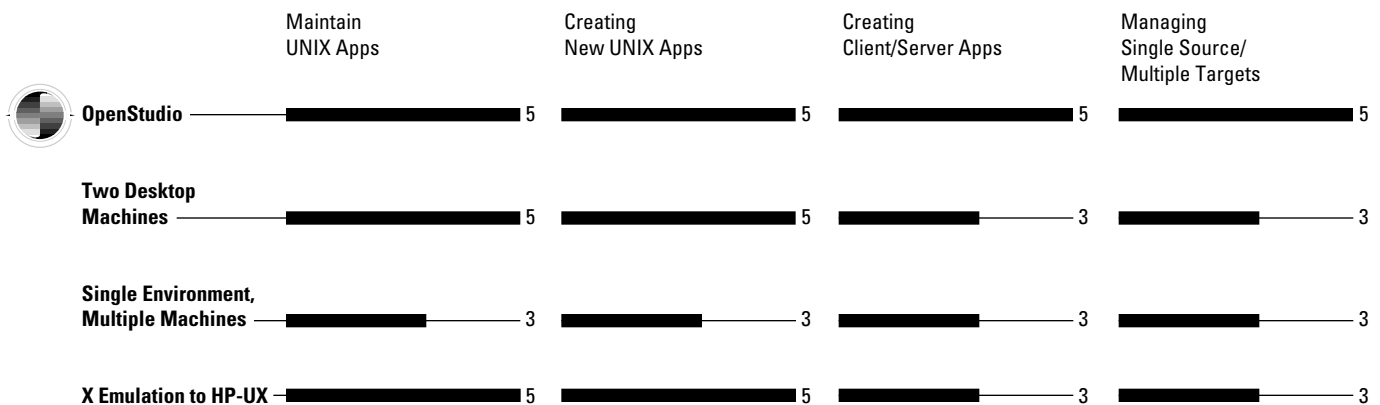
OpenStudio supports both HP-UX and Windows environments. Enterprises won't need to increase staff because there is no additional support training and system administration required.

Comparison of Alternative Approaches

OpenStudio's advantages are significant compared to other development models. The following chart presents OpenStudio versus the following options:

- Having two machines on your desktop — one for Windows, the other for UNIX.
- Having two machines on your desktop, but running a single environment for both UNIX and Windows.
- Relying on one PC to run X Emulation and operating two environments.

Longer bars are better: 5 strongest, 1 weakest



Summary

OpenStudio is a proven software solution that allows development groups to get products to market quickly, without added development costs. It also helps organizations protect their UNIX investments. Total cost of ownership is reduced. In addition, companies experience reductions in hardware and software costs, reductions in support costs, and no increased training time or costs.

To assure success in an increasingly aggressive global marketplace, enterprises must support heterogeneous environments with the most effective software tools. OpenStudio has been proven to be just such a powerful business instrument.



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