



Preserving the Business Value of Legacy OS/2 Applications:

Eliminating Risk in the Face of IBM's Withdrawal of OS/2 Support

Executive Overview

IBM®'s OS/2™ support sunset has introduced a new set of challenges for OS/2 users. This white paper will outline those challenges—such as unforeseen costs and availability issues associated with the sunset—and provide the information you need to evaluate the benefits and drawbacks surrounding potential solutions. In addition, we'll help you determine if a third party expert can enable a more positive outcome for your organization as you cope with the issues at stake.

Hardware certification for OS/2 ended on June 30, 2006

After Dec 31, 2006:

- OS/2 support costs are high
- No upgrades or further development is occurring on OS/2
- OS/2 is no longer certified to run on new hardware

Challenges in the face of the OS/2 support sunset

The OS/2 support sunset creates many unknowns moving forward. How much will it cost to maintain an OS/2 environment? What expertise will be required? What overall effect will this have on your business—and specifically on the applications that run on OS/2?

OS/2 users are likely to face some or all of the following key challenges in the face of the support sunset. First, users may face an inability to find a suitable replacement application, or to effectively build one with new technology. Problems could arise if an organization's OS/2 environment can not support newer technology—or if new business functionality can't be added due to a lack of in-house skills. Plus, it's likely that unforeseen risk and availability issues could result from an insufficiently supported platform. Finally, long-time users will likely face inevitable and unknown costs associated with the support sunset.

Your answers to the following key questions can help you determine your level of preparedness:

- How and where are you using OS/2 now?
- Do you know how many OS/2 systems you have?
- Do your mission critical applications depend on OS/2?
- Do you understand your options moving forward?
- Do you know where to seek help?
- Do you know how much it will cost to maintain your OS/2 environment moving forward?
- Will you be able to find the expertise you need to do so?

Potential Solutions

If you're not comfortable with the unknown costs and resource challenges associated with maintaining your OS/2 applications, it's time for a change.

There are three options to consider:

1. Find a comparable OS/2 replacement application
2. Rewrite the application for a different platform
3. Port your existing application to a new platform

Unfortunately, it may be difficult to find a suitable OS/2 replacement application with the specific functionality your organization requires. And rewriting the application can prove to be a lengthy and costly endeavor.

Porting, however, has helped many organizations avoid the risks and escalating costs associated with operating OS/2 applications beyond the sunset and has greatly minimized any disruption to the business. Specifically, porting your existing application involves adapting key software so it will function on a new platform other than the one for which it was originally written. Ported applications also tend to be very stable compared to new or even packaged implementations.

Consider the following perspectives as you determine next steps:

BUSINESS PERSPECTIVE ON PORTING:

	Port /Migrate	Rewrite	Software Package
Strategic Value	Low-High: tactical approach based on lowest cost and impact	High: opportunity to build in competitive advantage; appeals to market leaders	Medium: appeals to market followers
Addresses Outstanding Business Requirements	Low: typically does not include enhancements until after port	High: can be designed to meet precise needs	Medium: built-in functions, compromises to unique needs
Meets Non-Functional Requirements (e.g. performance, reliability)	Medium: addresses platform issues but not application design	High: can be designed to meet requirements	Medium: depends on product strength and vendor support
Ability to Meet Future Requirements	Medium-High: depends on application-design limitations	High: complete control over design and development	Low-Medium: depends on vendor product strategy and fit to local needs
User Impact	Low: user interface changes only	Medium: user interface and functionality changes	High: user interface, functionality and business process changes

PROJECT PERSPECTIVE ON PORTING:

	Port /Migrate	Rewrite	Software Package
Implementation Cost	Low: with limits on complexity of technology change	High: most costly alternative	Medium: depends on degree of customization required
User Cost	Low: very little requirement for project assistance	High: significant cost to define requirements, approve designs, and perform testing	High: significant cost to define requirements, configure product, approve designs and perform testing
Data Conversion Cost	Low: minimal requirement	High: required, must be developed or performed manually	Medium-High: depends on tools available from vendor
Time to Implement	Low: technology replacement	High: full development cycle	Medium: depends on level of customization and business process change
Risk	Low: minimum change	High: entirely borne by business	Medium: partly vendor's risk

PROJECT PERSPECTIVE ON PORTING:

	Port /Migrate	Rewrite	Software Package
Technology Platform Options & Standards	Medium: wide range of hardware/OS choices but may restrict software environment	High: any platform	Low-Medium: depends on choices supported by product vendor
Integration Requirements	Low: existing interfaces re-used	Low-Medium: depends on new design requirements	Medium-High: depends on completeness of vendor solution and interface tools
Operating Cost & Skill Requirements	Low-Medium: initial technology ramp-up but low in long term	Medium-High: depends on introduction of new technology and degree of functional change	Medium-High: vendor maintenance costs and customization support change
Stability & Risk Management	High: similar to current with skills upgrades	Medium: managed in-house but with usual new-application issues	Medium: provided by vendor but dependent on their skills/capacity
Ownership	High: same as current	High: business-owned	Medium: vendor-owned package, business-owned customizations

You should consider porting your existing OS/2 applications if you:

- Have had difficulty finding comparable functionality in existing software packages
- Have unique requirements that simply aren't available in today's off-the-shelf solutions
- Don't have the time to rewrite your application
- Lack the in-house expertise needed to continue to support OS/2 on your own
- Are looking for a seamless, cost-effective solution
- Want to avoid increased business risk due to the lack of OS/2 support available today

The bottom line? If there's no value in rewriting—or you don't need new functionality—then porting is your best solution.

Porting: Key Considerations

There are several popular operating systems to consider as you contemplate a porting solution—among these: Linux™, Windows™, UNIX®, AIX® and Vista®. In this section, we'll highlight some of the benefits of each system, and offer advice on ensuring a successful porting outcome.

Porting to Linux

Because of its ability to provide benefits such as improved reliability and lower total cost of ownership, Linux is extremely popular, especially in certain industries such as the financial industry. By porting to Linux, users will be vendor independent—which helps manage costs. Finally, Linux is a key platform for many mission-critical applications.

OS/2 to Linux Porting Considerations

- **Resource Namespaces:** OS/2 supports a global namespace for systems resources but Linux does not have an equivalent, so some application redesign is necessary.
 - **Error codes:** Depending on the style of error checking performed, many specific error codes have to be mapped or dropped when moving from OS/2 to Linux.
 - **Data Types:** OS/2 programs use many specialized data types to call system APIs, and those types need to be converted or re-defined for Linux.
 - **Threads:** There are subtle differences between threading models between OS/2 and Linux, however most functionality can come over with little change.
 - **Semaphores:** OS/2 semaphores (Mutex, Event, Counting, etc) can be emulated by using some glue code and calling POSIX style semaphore functionality.
 - **Critical Sections:** Linux does not support critical sections, so they must be emulated using an application global Mutex semaphore initialized on module load.
 - **Shared memory:** OS/2 supports named and giveaway shared memory, of which named can be emulated using some glue code and kernel parameters.
 - **Named Pipes:** OS/2 named pipes are supported on Linux by mapping them to the Linux file queue interface.
 - **Message Queues:** OS/2 message queue functions map to Linux native calls well, but the behavior can be different depending on usage so applications may need to be modified.
 - **Shared Libraries:** Shared library functionality maps very well from OS/2 to Linux.
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Porting to Windows

As the most commonly used proprietary operating system, Windows offers several key benefits to users such as:

- A high return on investment
- Timely payback of costs
- A complete cost-effective network solution
- The ability to improve productivity and improved security

Porting to UNIX or AIX

Highly flexible and easily compatible with many different types of machines, UNIX has earned a reputation as a stable, powerful and secure operating system. With fewer library conflicts, easy setup, no viruses, low cost and remote execution and administration, it's easy to see the appeal of UNIX—as well as IBM's version of UNIX, AIX.

Porting to Vista

Windows Vista addresses the key issues that impact many organizations. It's well known as a means by which companies can improve security and compliance, optimize the desktop infrastructure, enable a mobile workforce or better find and use information.

Achieving Predictable Porting Results

Utilizing a proven porting methodology can help your organization achieve predictable porting results. Effective methodologies typically include the following important elements:

- Assessment
- Design
- Code and Unit Test
- Integration Test

Benefits of a Third Party Partner

If your organization lacks the necessary expertise, a good third party partner can ensure a smooth and successful port—while offering critical benefits. For example, by seeking the support of a porting expert, you can potentially reduce errors and delays while ensuring success via a proven methodology. Another critical perk of tapping into the experience of a third party partner includes faster time to value. Accessing time-tested expertise can also help you mitigate risk and minimize the cost of “not doing it right the first time.”

Third Party Help—do you need it?

- Do you have the resources and skills to execute the port independently?
- Can you afford to obtain the necessary skills?
- Would you like to focus your critical resources on more strategic initiatives?
- Would you like to apply more resources to the port, without hiring any permanent staff members?

Datatrend Can Help

Datatrend has the expertise, tools and services to help you quickly and cost-effectively port your applications to a new system. We have extensive experience delivering infrastructure assessment services to very large enterprises. In addition, our subject matter experts are well-versed in providing OS/2 porting services—and you can preserve the business value of your OS/2 applications using our proven methodologies. Plus, we guarantee results and quality levels.

Datatrend OS/2 Porting Solution

Datatrend has extensive porting experience. In business since 1987, we deliver business process improvements that help improve efficiencies and create a competitive advantage. Datatrend works with medium and large businesses in all industries—with a focus on financial services, manufacturing, health care, retail, travel, and hospitality companies.



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