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Why an OS/2 Strategy for e-business?

IBM^(R) has endorsed the strengths and benefits of Internet technologies and platform independence for several years and has encouraged customers worldwide to make the transition to network computing. To facilitate this transition, IBM has enhanced the OS/2^(R) operating system to become an excellent platform for the deployment of e-business applications, while at the same time helping preserve investments in legacy applications. IBM has created a transformation plan that includes information customers can use to help transform their current client-and-server solutions into e-business solutions. The pace of e-business and hardware technology is often measured in "Web years" of three to four months of calendar time; so publishing a long-term operating system plan is unprecedented. Although it is our intent to proceed as described here, because of the pace of technology, statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Industry standards, Internet technologies, and platform independence are IBM's strategic recommendations for coping with the rapid pace of software and hardware technology changes. Exploitation of industry standards and Internet technologies hedges information technology investments, and platform independence preserves choices and options. Customers who have already made the transition to network computing have discovered that Internet technologies and platform independence can create a competitive advantage: they help reduce costs and facilitate the rapid deployment of new applications and services. The transformation to e-business could be a critical factor in a company's growth and prosperity, or a defensive strategy to protect a business from competitors. IBM has formalized its vision of e-business as the *IBM Framework for e-business*.

What is the IBM Framework for e-business?

The IBM Framework for e-business is a multi-tier distributed information technology environment, based on open industry standards that integrates Internet technologies with traditional information technology. In the typical three-tier distributed environment:

Three-tier Application Framework for e-business Distributed Environment

Network Infrastructure that uses industry standard APIs and protocols



- The **client** tier provides user access to the network. Devices include digital wireless telephones, network computers and PCs along with Java^(R) technologies that provide rich interaction among users and applications.
- The **Web application server** tier provides either an HTTP Server or a Web Application Server for business logic and access to host and external services using connectors.
- The **host server** tier provides data storage and transactional applications.

Solutions built within the IBM Framework for e-business can help:

- facilitate multi-platform deployment because they use open standards
- shorten the time and lower the cost of deployment because they are server-centric and do not require client updates
- accommodate business growth because they are scalable
- protect investments because they can be integrated with existing solutions

For more information about the IBM Framework for e-business, see <http://www.ibm.com/software/ebusiness/>.

What are the OS/2 Plans for 2001?

IBM plans to continue OS/2 support in the following areas:

- **e-business enabling enhancements:** IBM plans to provide IBM OS/2 Warp^(R) 4 and IBM OS/2 Warp Server for e-business enhancements that focus on e-business features such as TCP/IP, Java Virtual Machine (JVM), the IBM Web Browser for OS/2, and an IBM HTTP Web Server.

During 1Q2001 the Windows^(R) 2000 Primary Logon Client, which provides access from Windows 2000 clients to file and print services on Warp Server for e-business, the IBM Web Browser for OS/2, which is a Mozilla-based browser, and TCP/IP 4.3.1 for both client and server were made available on Software Choice. Mid-year 2001 an IBM HTTP Server with caching and proxy support and a Java 1.3 service update are planned, and in 4Q2001 Convenience Packages 2 for both Warp 4 and for Warp Server for e-business are planned.

- **Convenience Packages:** In 4Q2000 IBM enhanced Software Choice by providing CD ROM Convenience Packages 1 for Warp 4 and for Warp Server for e-business in the same national languages as supported by Warp Server for e-business. Convenience Packages include:
 - Selected Software Choice features, such as the Java Virtual Machine, TCP/IP, WebSphere^(TM), HTTP Server and browser enhancements
 - Cumulative fixes for Warp 4 and Warp Server for e-business
 - Device Drivers and Universal Serial Bus (USB) enhancements
 - Common code base across the Warp 4 and Warp Server for e-business

Convenience Packages 1 help simplify an upgrade by integrating previous fixes and features in one step. The Convenience Package 1 for Warp 4:

- Installs over Warp 3, Warp Connect or Warp 4
- Preserves desktop settings and preferences
- Leaves previously installed applications in place

The Convenience Package 1 for Warp Server for e-business:

- Installs over either Warp Server 4 or Warp Server for e-business
- Preserves desktop settings and preferences
- Leaves previously installed applications in place
- Preserves LAN Server settings and network settings

On 4Q2001 Convenience Package 2 for Warp 4 and for Warp Server for e-business are planned for install over the corresponding Convenience Package 1.

IBM plans to provide electronic or telephone Program defect support for Convenience Packages. A Support Line contract is a prerequisite for electronic or telephone support.

IBM recommends that customers purchase OS/2 software subscriptions to obtain new features and Convenience Packages. For more information about Convenience Packages see announcement letter 200-082 at <http://www.ibm.link.ibm.com/>.

- **Hardware and Device Driver Enhancements:** IBM plans to provide OS/2 compatible systems and device driver enhancements. We anticipate that over time some hardware device driver support will trend toward USB attachment, while some hardware and device driver support will continue in legacy mode. IBM posts hardware and device driver support information to the <http://service.software.ibm.com/os2ddpak/> Web site.

- **Transition and product enhancement services:** IBM offers fee-based transition services such as assessment, deployment assistance, and implementation. IBM will also consider requests for product enhancement services such as footprint reduction, hardware compatibility test, or device driver development.
- **OS/2 Defect Support:** Program defect support for customers with software subscriptions will be provided for OS/2 Warp 4 Convenience Packages and for Warp Server for e-business Convenience Packages through 31 December 2002. Limited warranty defect support will expire for Warp Server for e-business on 31 May 2002.

Following the expiration of Program or limited warranty defect support, IBM plans to offer fee-based defect support. We anticipate that over time the price of defect support will increase and might be charged on a per license basis.

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What are IBM's Recommendations?

IBM recommends that customers implement a phased transition from client-and-server environments to the IBM Framework for e-business by exploiting the key e-business technologies that are enabled by OS/2:

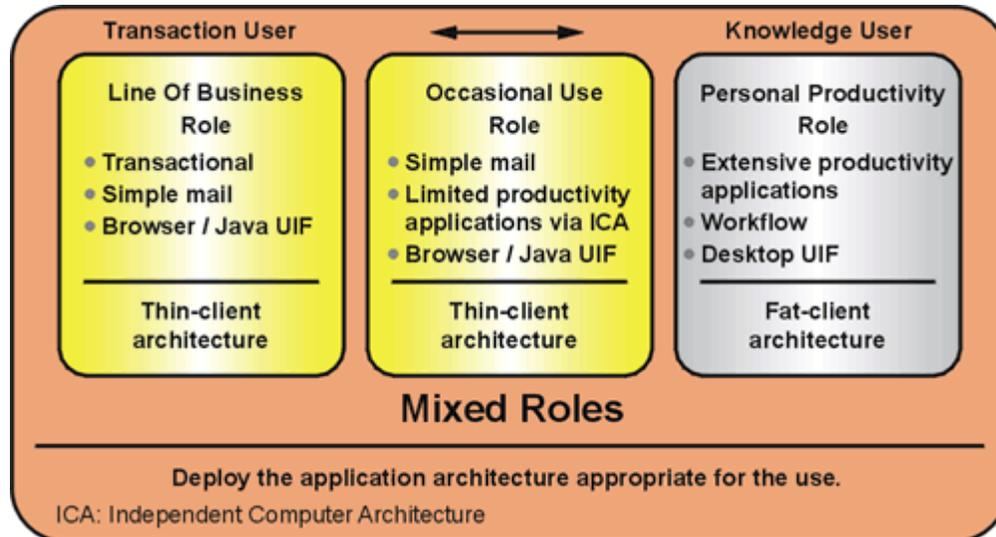
- Java – for program portability
- XML – for data portability
- Internet protocols – for data transmission and communication control
- Browser – for user interface
- HTTP Server – for an HTTP Server with proxy and caching
- Domino and WebSphere – for application serving

Briefly, IBM recommends using Internet technologies on both internal and external networks with server-centric business logic delivered by thin-client applications. Customers should exploit OS/2 e-business enhancements and deploy new e-business technology applications concurrently with existing OS/2 applications until platform neutrality has been achieved, and then change the operating system. IBM recommends three overlapping phases – Prepare, Deploy, Transition – as a means to help smooth migration and leverage Internet technologies.

- **Prepare** for the IBM Framework for e-business environment by:
 - Upgrading to current products that enable e-business application deployment concurrently with legacy applications:
 - OS/2 Warp 4
 - Warp Server for e-business
 - Evaluating current solutions and determining future requirements
 - Selecting the most comprehensive packaged frameworks and solutions that preserve the greatest portion of the current host-based solution
 - Installing TCP/IP and upgrading communications bandwidth throughout the enterprise
 - Using Domino for mail, line-of-business forms, and knowledge management
 - Utilizing IBM Services for product migration, readiness assessments, and planning
- **Deploy** applications in the IBM Framework for e-business by:
 - Using frameworks and solutions that implement Java and Internet technologies such as multi-threading, distributed objects, transaction commit and check point restart, and directory and security services
 - Developing new e-business applications using Java, WebSphere, and Domino
 - Exploiting XML for the data interface between the server and the client
 - Using the browser for a standards-based, browser-neutral user interface (UIF)
 - Using:
 - Tivoli^(R) solutions for systems management
 - MQSeries^(R) for messaging and information management
 - IBM DB2 Universal Data Base for data management
 - Utilizing IBM Services for deployment assistance
- Make the **Transition** of the operating system to an appropriate platform by:
 - Basing the selection of the server operating system on server consolidation, performance, capacity, and configuration management taking into consideration:

- Network bandwidth
- Database
- New IBM Framework for e-business applications
- Legacy transactional applications
- Basing the selection of the client operating system on a segmented view of user roles

The traditional user segmentation into transaction and knowledge users is reclassified below as Line-Of-Business, Occasional Use, and Personal Productivity. Most users operate in more than one role. Thin-client application architecture is platform neutral and is appropriate for most Line-Of-Business and Occasional Use applications. IBM recommends platform independent, thin-client application architecture, even if those applications are deployed on a fat-client operating system.



OS/2 Warp 4 provides you with the operating system platform for coexistence of legacy applications with new Java applications.

What Transition Services are available?

IBM recommends that customers utilize IBM Services for consulting, implementation, and operation.

- SWG^(*) e-business solution services at <http://www.ibm.com/java/assistance/ncs.html> focuses on engagements for transforming OS/2 applications into e-business applications and provides:
 - Consulting services for
 - The IBM Framework for e-business / Java Technology / WebSphere, MQSeries
 - Object-Oriented Approach
 - Multi-Tier Architecture Design and Analysis
 - Technical Services for transforming OS/2 applications into e-business applications
 - Proof of Concept
 - Prototype Development
 - Product Development
- SWG e-business solution services at <http://www.ibm.com/software/os/services/> focuses on engagements for OS/2 release-to-release and platform migration and provides:
 - Software migration to the latest OS/2 releases
 - Deployment
 - Performance tuning of OS/2 systems and applications
 - Problem determination
- IBM Global Services (IGS) at <http://www.ibm.com/services/> focuses on very large engagements and provides:
 - e-business Services:
 - e-commerce Services
 - Enablement Services for e-business
 - Hosted Business Application Services
 - e-business Accelerator
 - Business Consulting

- IT Consulting
 - Business Transformation services
 - Total Systems Management services
 - Strategic Outsourcing services
 - Lotus Professional Services (LPS) at <http://www.lotus.com/home.nsf/welcome/lps/> for:
 - Consulting
 - Education
 - Getting Started and Acceleration Packages
 - Tivoli Services at <http://www.tivoli.com/services/> for architecting and implementing Tivoli management software.
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Summary

In the past ten to fifteen years, companies have benefited greatly from client-and-server technology. However, the cost of maintaining and enhancing applications physically resident on every client has grown significantly. Solutions based on Internet and Java technologies in the IBM Framework for e-business directly address many of the deficiencies responsible for driving expenses so high.

Changing an information technology system is a major undertaking. However, ignoring the relentless pace of technology and the networked economy could be perilous. Change is inevitable, and changes justified by long-term benefits or mandated by competitive pressures are vital investments in a company's future. IBM has been your client-and-server provider and we also intend to be your best choice among e-business providers.

For examples of customer experiences with Java and the IBM Framework for e-business, see <http://www.software.ibm.com/casestudies/>

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