

**IBM S/390
Introduction
July 2000**

**LINUX for S/390
Frequently Asked Questions
FAQs**

Worldwide

08/18/200012:10:15 PM



Linux FAQ PACKAGE

S/390 Virtual Image Facility for Linux

Question: What is the Virtual Image Facility™ for LINUX®?
Answer: The S/390® Virtual Image Facility for Linux is a complete server environment for multiple Linux systems on one S/390 processor. It is an easy-to-use high performance supervisor that operates within a logical partition of an S/390 processor or in native S/390 mode. The Virtual Image Facility also provides an internal network that can be used for high-speed communication among Linux images.

Question: What are the benefits the Virtual Image Facility for Linux provides to me?
Answer: Tens to hundreds of Linux images can be run on a single instance of Virtual Image Facility. Linux images can be created and managed quickly and easily.

Question: How can I manage all these Linux images?
Answer: Through the use of administrative commands you can create, delete start and stop images, increase DASD for the image or for paging, and increase the amount of memory available to the image. There are also commands to aid in applying service and capturing information when a problem occurs.

Question: Where can the Virtual Image Facility and other Linux programs be run?
Answer: The Virtual Image Facility for Linux and other Linux Software can be run anywhere that Linux for S/390 can be run. It can be installed in dedicated processors or engines. It can also be run on engines shared with other S/390 software. This shared environment can be implemented with S/390's logical partitions. You can then pilot, develop, or run in production your Linux applications in any of these environments.

Question: Will I be able to install the Virtual Image Facility for Linux on all IBM servers?
Answer: The Virtual Image Facility for Linux is an offering specifically tailored for running Linux on the S/390 platform. The Virtual Image Facility is only supported on the S/390 Parallel Enterprise Server™, Generation 5 or 6 and the S/390 Multiprise® 3000.

Question: Is the IBM S/390 Integrated Facility for Linux required in order to run the Virtual Image Facility?
Answer: No, the Virtual Image Facility does not require the IBM S/390 Integrated Facility for Linux.

Question: What other hardware or software requirements exist for the Virtual Image Facility?

Answer: In addition to the above listed servers, the following hardware is also required:

- ◆ Minimum of one 3390 DASD, more disk space will be required as the number of Linux systems running under Virtual Image Facility increases
- ◆ One 3480 or 3490 tape drive
- ◆ An OSA-2, or OSA Express adapter, channel attached 3172 interconnect controller, or equivalent hardware to connect Virtual Image Facility directly to a LAN.
- ◆ Additional network interfaces to connect Linux images directly to a LAN.

Question: How does a Linux image under the Virtual Image Facility access DB2® data?

Answer: A Linux can access DB2 data through DB2 Connect™, which uses TCP/IP as its communication protocol.

Question: When will the Virtual Image Facility be available?

Answer: The Virtual Image Facility will be available September 29, 2000.

Question: What is the impact on charges for existing IBM S/390 software if I run Virtual Image Facility?

Answer: Installing LINUX for S/390 or the Virtual Image Facility itself will not affect the software charges for the other IBM software products installed on your S/390 system. However, if you add processor capacity, or move to a higher software group or add additional software products to your existing or new S/390 capacity, the charges for your IBM software products will increase.

Question: What is the impact on charges for my non-IBM S/390 software if I run Virtual Image Facility?

Answer: If a customer increases the S/390 capacity to run Linux and the Virtual Image Facility, then current software charges may increase. Many USVs have announced new pricing schemes for Linux workloads. Please contact your vendor for more information.

Question: Will normal IBM software defect support be available for Virtual Image Facility?

Answer: IBM will provide defect support under the warranty for Virtual Image Facility by fax, e-mail, and postal mail. In addition, if you require telephone support, service fixes and new releases, you may purchase the SW Subscription and Support license for each S/390 processor engine that is designated as a Linux engine and running the Virtual Image Facility.

Question: If I don't purchase a Software Subscription and Support License for Virtual Image Facility for Linux at the time I acquire the product, can I purchase a contract at a later point in time?

Answer: Yes.

Question: I noticed that the Virtual Image Facility, 5739-A01, and the SW Subscription and Support, 5739-SPT, are priced on a per engine basis. What is an engine?

Answer: An engine is defined as an individual S/390 processor within the S/390 server. For example, an S/390 Parallel Enterprise Server Generation 5 with 5 S/390 engines has a model designation of R56.

Question: Will I be able to run Virtual Image Facility on a non-IBM processor?

Answer: Please contact your hardware vendor for more information.

Question: What documentation exists to help me install the Virtual Image Facility?

Answer: The Virtual Image Facility includes installation information in the S/390 Virtual Image Facility for Linux Guide & Reference that provides step-by-step procedures for installation and customization.

Question: I use CMS utilities under VM/ESA® to manage my current virtual servers. Will the Virtual Image Facility provide these same utilities?

Answer: The Virtual Image Facility for Linux was designed specifically for the Linux for S/390 environment and does not support CMS.

Question: How do I install the Virtual Image Facility?

Answer: To install the Virtual Image Facility, you restore a magnetic tape to a 3390 DASD, answer some configuration questions, and customize a Linux for S/390 image according to its distributor's instructions. Please refer to the Installation Guide for step by step instructions.

Question: What interfaces are you providing to create and manage virtual Linux for S/390 servers?

Answer: The Virtual Image Facility includes a Linux-based command interface that provides facilities for managing Linux images.

Question: What is the expected performance with Virtual Image Facility?

Answer: IBM laboratory evaluations have shown that system management costs for Linux images sharing S/390 hardware under the Virtual Image Facility is similar to functions under Logically Partitioned Modes (LPAR) or VM/ESA. System management costs have been considered acceptable to customers and can consume as little as 5% of the system in support of up to hundreds of Linux instances. For proper sizing of specific customer environments, please contact the appropriate IBM support channel.

Question: How many copies of the Virtual Image Facility can be run on a single S/390 system?

Answer: Customers may run one copy of Virtual Image Facility per logical partition of an S/390. You can have up to 15 logical partitions on your S/390 processor

Question: I currently do not have Linux for S/390 on my system and I want to use the Virtual Image Facility. Can I also order Linux for S/390 from IBM?

Answer: No, Linux for S/390 can be ordered through SuSE Linux AG or TurboLinux, Inc., our distribution partners. For more information, please visit their web sites at:
.suse.com
.turbolinux.com

Question: When should I run Linux for S/390 under the Virtual Image Facility for Linux and when should I run Linux under VM/ESA?

Answer: For customers with minimal or no VM skills or wanting to run just Linux servers on S/390, the Virtual Image Facility is easier to use. For customers who want to run multiple S/390 operating systems, such as OS/390®, VSE/ESA™ and Linux, VM/ESA is a more logical choice since it provides support for all of these environments. VM/ESA also provides more comprehensive performance tuning, systems management and functionality.

Question: I run VM/ESA today. Can I now run my VM applications on the Virtual Image Facility instead?

Answer: No, the Virtual Image Facility is designed specifically to run Linux images. VM applications will not run under the Virtual Image Facility.

IBM S/390 Integrated Facility for Linux

Question: What is the IBM S/390 Integrated Facility for Linux?
Answer: The IBM S/390 Integrated Facility for Linux is an S/390 Enterprise Server Generation 5 or Generation 6 Processor Feature which allows you to dedicate one or more engines of the S/390 Parallel Enterprise Server G5 or G6 to run the Linux environment and Linux applications only.

Question: Which software will I be able to run in the IBM S/390 Integrated Facility for Linux?
Answer: Linux for S/390, S/390 Virtual Image Facility for Linux, IBM middleware running on Linux for S/390, any applications running on Linux for S/390 as well as non-IBM middleware for Linux for S/390 can be run in the IBM S/390 Server Feature.

Question: What are the benefits of dedicating engines to Linux work?
Answer: The IBM S/390 Integrated Facility for Linux on the S/390 Parallel Enterprise Servers G5 and G6 enable an installation to purchase additional processing capacity exclusively for Linux workload, with no effect on the G5 or G6 model designation. For example, a G6 model X57, with additional capacity added by the IBM Integrated Facility for Linux, will continue to report its S/390 capacity as a model X57. Consequently, adding Linux workload to a G5/G6 server via the Integrated Facility for Linux will cause no increase in IBM S/390 software costs.

Question: For which servers will the IBM S/390 Integrated Facility for Linux be available?
Answer: The IBM S/390 Integrated Facility for Linux will be available for S/390 Parallel Enterprise Server G5 and G6.

Question: When will the IBM S/390 Integrated Facility for Linux be available?
Answer: September 29, 2000.

Question: Since Linux for S/390 runs on IBM Multiprise 3000, will IBM offer the IBM S/390 Integrated Facility for Linux on IBM Multiprise 3000 as well? If not, why not?
Answer: Since the Multiprise 3000 does not ship with spare CPs, the IBM S/390 Integrated Facility for Linux will not be offered on these machines.

Question: What is the maximum number of processors on a 9672 that can be used for the IBM S/390 Integrated Facility for Linux?

Answer: The maximum number of processors on a 9672 that can be used for the IBM S/390 Integrated Facility for Linux depends on the processor model.

For an IBM Parallel Enterprise Server G5 - model RA6, RB6, RC6, RD6, R16, R26, R36, R46, R56, R66, R76, R86, R96, Y16, Y26, Y36, Y46, Y56, Y66, Y76, Y86, Y96 - up to (7) features may be ordered, depending upon the number of unreserved ICFs available on the model.

For an IBM Parallel Enterprise Server G6 - models X17, X27, X37, X47, X57, X67, X77, X87, X97, XX7, XY7, Z17, Z27, Z37, Z47, Z57, Z67, Z77, Z87, Z97, ZX7, ZY7 - up to (11) features may be ordered, depending upon the number of unreserved ICFs on the model.

Question: If I dedicate an entire S/390 server to Linux, can I make all the S/390 engines, IBM S/390 Integrated Facility for Linux engines?

Answer: No. On a dedicated machine where there is no concern with other software charges based on total machine capacity we would expect that many customers would not purchase the features and instead use the standard model. (Only a G5 or G6 machine with at least one CP is able to have the IBM S/390 Integrated Facility for Linux option.)

Question: Why does IBM provide the IBM S/390 Integrated Facility for Linux only for Linux environments ?

Answer: IBM provides this feature so that customers can have a dedicated environment to run Linux. This dedicated environment is competitively priced with similar hardware capacities that the customer would see on alternative hardware platforms.

Question: Will I be able to install the IBM S/390 Integrated Facility for Linux on a non-IBM processor?

Answer: The IBM S/390 Integrated Facility for Linux is a hardware feature exclusive to the IBM Parallel Enterprise Server G5 and G6.

Question: What does the IBM S/390 Integrated Facility for Linux cost?

Answer: The introductory price is \$125,000 per engine. Price is in U.S. dollars and may vary in other countries. The IBM S/390 Integrated Facility for Linux is based on the Integrated Coupling Facility pricing model.

General Linux for S/390

Question: What did IBM announce regarding LINUX and S/390?
Answer: IBM announced that we successfully completed the technical validation of Linux for S/390. With the success of this validation, we announced that TurboLinux and SuSE will be distributing Linux for S/390. And finally, we announced a set of services and a support structure. Linux for S/390 is ready to run your e-business.

Question: Is Linux for S/390 an IBM product ?
Answer: No, Linux for S/390 is an Open Source operating system and it is available to download from the internet at no charge. Commercial distributions will be available from companies that have a marketing relationship with IBM. These companies are SuSE and TurboLinux.

Question: If Linux for S/390 is available at no charge on the Internet, why would I pay for a commercial distribution ?
Answer: The value of the commercial distribution is in the added value that the distributors provide. Typically these include customized installation streams, middleware and applications in addition to the Linux for S/390 operating system.

Question: I have heard that Linux is Open Source? What does that mean?
Answer: Open Source software is a matter of flexibility, not price. Open Source software refers to the users' flexibility to run, copy, distribute, study, change and improve the software. With the Linux operating system being Open Source, you can still run middleware and applications that are not Open Source or free software.

Question: Why would we run Linux on a S/390 server ?
Answer: S/390 provides the ability to host hundreds of Linux systems on a single hardware platform. Linux is particularly appealing to existing S/390 customers who want to centralize management of servers and to increase the number of applications integrated with their S/390 transactions and data.

Question: Why did IBM make the modifications that enable Linux to run on S/390?
Answer: IBM contributed the code to the Open Source community to enable the technical validation of Linux on S/390 hardware and to invite feedback from the Open Source community as well as existing S/390 users.

Question: I have some IBM middleware that runs on Linux on a platform other than S/390. If I wish to run it on Linux for S/390 do I have to obtain a separate license for the S/390, or can I simply install it on the S/390 and run it ?

Answer: Unless IBM has created a version of the middleware in question for Linux for S/390, the existing license does not provide coverage to other platforms. Should IBM create such a version, it will have associated prices, terms and conditions that will govern its use.

Question: I have some middleware that runs on Linux that I purchased from an Independent Software Vendor. Are there licensing requirements I have to adhere to if I wish to run it on my S/390 ?

Answer: You should check with the Independent Software Vendor who supplied the product(s) to ensure that the software runs on S/390 and that your license agreements are valid.

Question: When is OS/390 UNIX System Services more appropriate than Linux for S/390 ?

Answer: Once S/390 has been chosen as your deployment platform, the appropriateness of the UNIX System Services or Linux for S/390 is largely determined by the business demands of the application. USS specifically exploits OS/390 function to bring S/390 qualities of service to applications. For this reason, IBM would recommend deployment of mission critical applications on OS/390

Question: How does Linux for S/390 relate to other IBM UNIX offerings ?

Answer: AIX and OS/390 are UNIX-branded. Our strategy for our UNIX branded operating systems remains the same, that is, to meet customer needs for highly available application hosting. Among the various UNIX systems on the market, application porting has proved costly, as each UNIX system requires unique changes to applications. Linux offers an identical operating system on various hardware platforms. This makes applications truly portable

Question: Why didn't IBM port Monterey to S/390 instead of Linux ? Since Monterey is an extremely robust UNIX environment and it will support Linux applications, wouldn't that be the best of both worlds ?

Answer: IBM didn't port Monterey to S/390 because there is already an extremely robust UNIX environment in place on S/390, the UNIX System Services of OS/390, which provides a branded UNIX environment with S/390 qualities of service. It was our intention to enhance S/390's application portfolio, and to leverage the strengths of the Open Source community by adding a pure, native Linux to S/390.

Question: Will installing Linux for S/390 on my system have any effect on the charges for the other IBM software products currently installed on my S/390 system ?

Answer: Installing Linux for S/390 itself will not affect the software charges for the other IBM software products installed on your S/390 system. However, if you add processor capacity and increase the number of MSU's (for OS/390 and MVS), move to a higher software group (VM and VSE), or add additional software products to your existing or new S/390 capacity the charges for your IBM software products may increase.

Question: What is the advantage of Linux for S/390 for VSE Customers?

Answer: VSE customers who want to run UNIX-like applications can now do this with Linux for S/390 using an LPAR or VM, without the need for an additional server when the applications are available for Linux for S/390.

Question: How much is Linux for S/390 ?

Answer: Linux for S/390 is part of the Linux free source. Each distributor will add additional value by adding utilities and tools. Please contact the Linux vendor for their terms and conditions.

Question: What type of support will be provided ?

Answer: IBM Global Services will provide fee based consulting, planning , implementation services, defect and remote technical support for Linux for S/390. IBM will help answer how-to questions, help define problems and determine their source. Additionally, IBM plans to work together with the key distributors of the Linux for S/390 operating system, IBM will be able to provide defect-level support for all eligible generally available distributions of the Linux for S/390 operating system.

IBM consultants are available to help customers evaluate their Linux for S/390 requirements and to assist in implementing and optimizing their Linux for S/390 solutions.

Key services that will be available include:

- Consulting and planning services
- Implementation services
- Infrastructure design
- Application enablement services
- Database enablement services

Because Linux is still an evolving environment, customers may want a service partner to help properly configure and implement, as well as enhance, their Linux solutions. Customers can turn to IBM Global Services for one-stop shopping for Linux support.

For more information, customers can contact their IBM representative or call 1-800-426-4968 (U.S. And Canada) or the appropriate IBM number in their region.

Question: What is the future of OS/390 and Linux for S/390?
Answer: OS/390 is IBM's premier operating system. No operating system in the world can match its availability and its robust functionality. Linux will complement OS/390 by offering more applications, and connecting into OS/390 for access to mission critical data and transactions.

Question: Will Linux for S/390 offer me the same reliability, availability, and serviceability as IBM S/390 operating systems ?
Answer: OS/390, VM/ESA, and VSE/ESA each have unique architectures designed to meet the worlds most critical computing needs. The continuous availability attributes built into these systems were developed over decades. OS/390 for example, is well known in the industry as having unsurpassed availability. Analysts refer to it as legendary. Linux is an Open Source Operating System that is based upon a modular design, making it easy to adapt to various hardware platforms. It benefits from the basic reliability characteristics of S/390 hardware such as CPU sparing, LPAR, EMIF, and error correction and detection. However, the more advanced functions that are implemented architecturally in today's S/390 hardware and software, for example hardware-assisted cryptography and data compression would require corresponding software support in Linux.

Question: I have an application that I am considering porting to OS/390 using the UNIX System Services. Should I continue to do this, or would it be better for me port it to Linux for S/390 ?
Answer: Each application should be evaluated based on its individual characteristics and requirements. If you have begun porting to OS/390, you should continue. IBM will provide assistance via the Align.

Question: Does running Linux on an S/390 platform have any advantages over running Linux on a different architecture ?
Answer: Running Linux on an S/390 platform may afford certain advantages to the user depending upon application type and the need to inter-operate with other applications. S/390's ability to support multiple operating environments on the same hardware platform through either native Logical Partitioning, or the VM/ESA operating system, could offer advantages such as more efficient communication between applications thus reducing network latency. S/390's processing power, efficient memory management, and I/O bandwidth may make it possible to reduce administration and support costs by consolidating discrete Linux systems onto a single S/390.

Question: What are the benefits of running Linux as a guest of VM/ESA?
Answer: Running Linux in a virtual machine environment offers many advantages, such as: resource sharing, data-in-memory performance, debugging, and automation. Linux systems running in virtual machines can take advantage of VM's high performance virtual networking capabilities to communicate with other virtual machines running Linux or other S/390 workloads. You can also run hundreds of Linux guests, which makes it relatively easy to consolidate hundreds of servers onto a single S/390.

Question: Will new versions of Linux be available for S/390 at the same time as Intel, or will there be a delay?
Answer: The S/390 code is part of the Open Source kernel. So whenever a new version of Linux is made available through Open Source, the S/390 support will be there automatically. This is the great advantage of official participation in the Open Source community. Vendors distributing Linux and others can pick up that code for S/390 Linux at the same time they pick it up for Intel.

Question: How can I add Linux capacity to my S/390 without increasing my S/390 software charges?
Answer: Ask your sales person about the Linux for S/390 Workspace Offer.

Question: I need more than 15 Linux images on a single S/390 and I do not want to install VM. How can I do that?
Answer: IBM will deliver a new software product that will allow multiple Linux systems to be run on a single S/390 system or logical partition. Customers interested in early availability of this product should contact their IBM representative.

Technical

Question: Do I need another, traditional, operating system to run Linux for S/390 ?
Answer: No, Linux runs natively on S/390 hardware. Linux for S/390 does not require services or support from other operating systems in order to run. However, the installation of Linux for S/390 requires that a Linux install tape must be built to install the Linux for S/390 code on the S/390 DASD. You will need to use a traditional S/390 Operating System to create the tape. The traditional operating system does not have to reside on the same footprint where Linux for S/390 will be installed. Customers can run Linux on a stand-alone S/390, within an LPAR, or as an operating system under VM.

Question: What services or functions are needed to make S/390 hardware ready for Linux?
Answer: Utilities to prepare the I/O configuration (IOCP). IOCP is available with the hardware.
Refer to the Stand-Alone IOCP User's Guide (GC38-0456-02) for information on configuring S/390 hardware without any other operating system.

Question: What are the system requirements for Linux/390 ?
Answer: The following are the minimum recommendations:
Processors: 9672 G5 and higher or Multiprise 3000
64MB central storage minimum
Devices: 1 ECKD-DASD (3380 or 3390 or equivalent)
or Multiprise internal disk
3215 System Console
Tape Drive
Network: ESCON CTC or OSA2 (Ethernet or Token Ring)
Workstation: With CD-ROM for Installation

To run Linux as a guest under VM/ESA requires VM/ESA V2R2 or later.

Question: Does Linux run on OS/390 or using some emulation technique ?
Answer: No, Linux for S/390 is not an emulation, it runs natively on S/390.

Question: What character code is used ?
Answer: ASCII

Question: What about the performance of Linux for S/390 ?
Answer: The degree that Linux for S/390 performance will play a role in comparisons will depend on the application and/or benchmark that has been chosen for the comparison. Typically, a single function, measured with a light workload, may or may not run faster on S/390. Results will depend on the generation of the S/390 compared to the generation of the other platform. CPU speeds will continue to accelerate, and individual functions will directly benefit from this speed regardless of architecture. However, the S/390 architecture permits for larger levels of scale than other platforms by utilizing a larger number of engines available within a single footprint or through the ability to multiply images utilizing unique S/390 functions such as LPAR, VM guest support or Virtual Image Facility. This unique management capability that S/390 provides, allows for consolidation of hundreds of light to medium used servers onto a single, efficiently managed, hardware server. Therefore, when executing thousands of disparate functions, like those found in a typical production environment, S/390 scale outperforms other architectures.

Question: How do I back up a Linux for S/390 system ?
Answer: Currently Linux for S/390 does not support tape units. Instead, there are three ways to do backup:

- duplicate the files on your Linux for S/390 system on other DASD
- you may use the storage management utilities of another S/390 operating system
- create TAR files on an NFS mounted device

Question: What device drivers are available for Linux on S/390 and how do I obtain them?
Answer: The following Linux for S/390 device drivers can be downloaded from the IBM developerWorks Web site at:
oss.software.ibm.com/developerworks/opensource/linux390/index.html
The specific devices supported at this time are:
Disk devices - ECKD 3380 or 3390, VM minidisks
Network devices - CTC, IUCV, OSA-2: Token Ring, Ethernet
Character devices - 3215 console, Hardware Management Console
The OSA-2 device driver is available only in object code format

Question: Does Linux for S/390 support tape units ?
Answer: Linux for S/390 does not support tape devices at this time. There is currently no tape support available.

Applications and Middleware:

Question: Are there any applications or packages that run on Linux for S/390, and how do I get them ?
Answer: Yes. There are several applications and packages that run on Linux for S/390. They are available on the Internet. One source of packages and applications is:

The Thinking Objects Web site currently has over 400 packages and applications for Linux on S/390. The url is: Linux.s390.org/

Since the list of packages and applications for Linux for S/390 is constantly growing, we suggest that you check these sites periodically for new additions.

Question: I have a major investment in DB2 data, application and skills on my S/390s. Will I be able to leverage or utilize them with Linux for S/390?

Answer: IBM intends to make available IBM DB2 Universal Database and IBM DB2 Connect on Linux for S/390. These will allow customers to deploy applications to access their local data residing on Linux for S/390 and/or provide the capability to access data residing on any other DB2 database in the enterprise. IBM DB2 Connect on Linux for S/390 can also be used to consolidate all gateway connectivity processing at the host eliminating the need for a middle tier of hardware.

Question: When will DB2 capability be available?

Answer: The beta program for IBM DB2 Connect and DB2 UDB will start in 3Q00 for a selected set of customers. These customers will participate in a beta evaluation and test and provide feedback on product function and quality. When these customers confirm that IBM has achieved the functional and quality objectives, IBM will announce planned availability and detailed information regarding pricing and ordering.

Question: Will functionality of DB2 for Linux for S/390 be similar to that of DB2 for OS/390 or to that of DB2 for Linux for Intel?

Answer: The functionality of DB2 for Linux for 390 will be similar to that already in existence on the Linux/Intel platform

Question: When is DB2 UDB for Linux for S/390 more appropriate than DB2 UDB for OS/390?

Answer: The appropriateness of DB2 running under OS/390 or Linux for S/390 is largely determined by the business demands of the application. DB2 UDB for OS/390 specifically exploits OS/390 functionality to bring S/390 qualities of service to applications. For this reason, IBM would recommend deployment of mission critical applications on DB2 UDB for OS/390.

Question: I have a major investment in IMS data, application and skills on my S/390s. Will I be able to leverage or utilize them with Linux on S/390?

Answer: IBM is also providing access to IMS from Linux for S/390 through the IMS V7 Connect feature. IMS Connect can be used by an application running on Linux for S/390, to access local applications and data residing in IMS, running under that or any other S/390 system in the enterprise.

Question: When will this access to IMS data be available ?

Answer: The IMS Connect feature of IMS Version 7 is now being used by IMS customers, as part of IBM's Quality Partnership Program, an early support program. We expect General Availability 4Q00.

Question:

How can I get started with access to IMS data now ?

Answer:

If you want to begin planning/testing right now, there are two ways to get started:

1. There is an earlier version of the IMS Connection (IMS TOC) which can be downloaded at no additional cost to licensed IMS customers from the IMS website at *ibm.com/IMS*
2. There is a Version 7 Jump Start Services Offering (implementation class, workshop, conference calls, 50 hours tech support), provided for a fee, which includes use of the IMS Version 7 code prior to GA. The contact for this is Paul Carey (408-463-3493), "dmservices@us.ibm.com"



(C) Copyright IBM Corporation 2000
Marketing Communications, Enterprise Systems Group
Route 100
Somers, NY 10589