

IBM @server zSeries
Introduction
October 2000

LINUX for zSeries
LINUX for S/390

Frequently Asked Questions
(FAQs)

Worldwide



LINUX 1003 FAQ PACKAGE

Linux for zSeries

Question:

What is LINUX® for zSeries?

Answer:

Linux for zSeries is the 64-bit version of Linux for S/390® running on the new IBM @server zSeries 900 architecture.

Question:

Can I run Linux for S/390 on zSeries?

Answer:

Yes, but only in 31-bit mode. You will need the 64-bit version of Linux for S/390 to take advantage of the zSeries architecture.

Question:

What are the components of Linux for zSeries?

Answer:

Linux for zSeries will contain a 64-bit version of the kernel, the key device drivers, the compiler (gcc) and the Runtime library (glibc). There will be support for 64-bit real and virtual. Using Linux for zSeries, customers will be able to use main storage above the 2 GB line.

Question:

What are IBM's plans to make Linux for zSeries available?

Answer:

Linux for zSeries will be based on the open source Linux 2.4 kernel. Linux for zSeries will be available as soon as possible after the 2.4 kernel is released to the open source community. We anticipate that will occur in early 2001.

Question:

If I run my Linux for S/390 application on zSeries and then migrate to a Linux version in 64-bit mode, do I need to recompile or change the source code?

Answer:

Yes you need to recompile an application to take advantage of the 64-bit code.

Question:

What other enhancements will there be for Linux for zSeries?

Answer:

IBM intends to support HiperSockets™. HiperSockets provides high-speed memory-to-memory TCP/IP communication across partitions. This allows TCP/IP traffic to travel between partitions at memory speed rather than network speed. This "network in the box" minimizes network latency and maximizes bandwidth capabilities between Linux for zSeries and z/OS images. This enables optimized e-business and ERP solutions within a single CEC.

Question:

Will zSeries run a multi-CPU Linux solution?

Answer:

Today Linux for zSeries can only run on a single system. However, customers can run tens or hundreds, if not thousands of Linux images on a single zSeries for less than it might cost to run them on PCS. Using both HiperSockets and Virtual Image Facility™, customers have the flexibility of multi-Linux systems with the cost effectiveness of a single footprint.

Question:

Has IBM changed its Web serving strategy for OS/390® and z/OS with the introduction of Linux for S/390 and Linux for zSeries?

Answer:

Customers can choose to run their Web server under Linux, under z/OS or under both. It will depend on the type of application they are building. The functionality of WebSphere™ under z/OS and its ability to run in a Parallel Sysplex® environment must be balanced with the simplicity of running a simple Web server under Linux.

Linux for S/390

Question:

Can Linux for S/390 use the hardware Crypto?

Answer:

No. But work is underway now to provide this support.

Linux for S/390 Gigabit Ethernet Support

Question:

What does Gigabit Ethernet support in Linux for S/390 mean?

Answer:

The Gigabit Ethernet driver in Linux for S/390 supports the functions of the Gigabit Ethernet card. This driver supports the IPv4 protocol, delivering the advantages of more rapid communication across a network. This improvement may be between virtual Linux instances on a single machine (either in LPAR mode, or virtual mode) communicating across a network, or a Linux for S/390 instance communicating with another physical machine across a network. Gigabit Ethernet support for Linux for S/390 is available now on developerWorks and will be part of the SuSE and TurboLinux generally available distributions in 4Q00.

IBM S/390 Integrated Facility for Linux

Question:

Can I buy a machine that is made up entirely of IBM S/390 Integrated Facility for Linux engines and no traditional engines, and if not, why not?

Answer:

No. The IBM S/390 Integrated Facility for Linux is an orderable feature on certain existing models of the 9672 Parallel Enterprise Server Generation 5 and 6 and the new zSeries. All eligible G5 and G6 and zSeries server models have at least one S/390 traditional engine, or "Central Processor", as part of this offering. At the present time, IBM has no server models that do not provide at least one S/390 Central Processor, within the G5/G6 and the zSeries product family.

Question:

Is the IBM S/390 Integrated Facility available on zSeries?

Answer:

Yes.

S/390 Virtual Image Facility for Linux

Question:

Can I install the Virtual Image Facility on zSeries?

Answer:

Yes but it will run only in 31-bit mode.

Question:

Does Virtual Image Facility run in 64-bit mode on zSeries?

Answer:

No. Virtual Image Facility only runs in 31-bit mode on zSeries. Customers wanting to run a large number of Linux for zSeries images on a single processor in 64-bit mode can do so using the z/VM product. IBM recognizes the interest in having a 64-bit capable Virtual Image Facility in the future.

z/VM and Linux

Question:

What is z/VM?

Answer:

z/VM is a new IBM product that builds on the virtual machine technology found in VM/ESA and provides advanced support for IBM's new zSeries processor family, including support for the 64-bit z/Architecture.

z/VM can run in 31-bit or 64-bit mode on the new zSeries. It also runs in 31-bit mode on the following IBM processors:

- All models of the S/390 Parallel Enterprise Server™ Generation 3, 4, 5, and 6
 - All models of the Parallel Enterprise Server R2 and R3
 - All models of the S/390 Multiprise® 3000 or Multiprise 2000
 - All S/390 Integrated Servers
 - PC Server System/390® or RS/6000® with System/390 Server-on-Board
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Question:

What release of VM can I run Linux under on zSeries?

Answer:

Linux for S/390 and Linux for zSeries can both run under the z/VM product. Running Linux for zSeries on z/VM requires that z/VM be running in 64-bit mode. Linux for S/390 can run under a 31-bit or 64-bit mode z/VM system. When in 64-bit mode, z/VM can address greater than 2 GB of real memory in support of a large number of 32-bit Linux for S/390 images. Linux for S/390 can also run on VM/ESA® releases 2.3.0 and 2.4.0 on zSeries. VM/ESA only runs in 31-bit mode on zSeries.

IBM Middleware for Linux for S/390

Question:

When will the IBM middleware for Linux for S/390 be available?

Answer:

The IBM middleware running on Linux for S/390 will be available at the following dates:

Product	Beta Availability	General Availability
CICS® Transaction Gateway V3.1	Avail. now	Dec. 22, 2000
MQSeries® Client	Avail. now	Dec. 15, 2000
WebSphere Advanced Edition V3.5 with Java JDK V1.2.2	Avail. now	Dec. 22, 2000
DB2® UDB Enterprise Edition V7	Avail. now	Dec. 15, 2000
DB2 Connect V7	Avail. now	Dec. 15, 2000
IMS Connect	Avail. now	Oct. 27, 2000
Tivoli® Storage Manager Client	N/A	Dec. 29, 2000
Tivoli Management Framework plus selected applications	4Q00	1H2001

Support for Linux for zSeries and Linux for S/390

Question:

What type of support and services will be available for Linux for zSeries and Linux for S/390?

Answer:

IBM will provide the following support and services for Linux for zSeries and Linux for S/390:

- Operational Support Services - Support Line for the Linux operating system, which provides remote technical support for either the SuSE or TurboLinux generally available distributions on supported processors
- IBM service offerings for infrastructure, application implementation and customized offerings

For more information, please visit: ibm.com/linux/support

Question:

From which companies, IBM or the distributors, can I buy support services for Linux for S/390? Do I have a choice?

Answer:

Yes, you can choose whom you wish to provide support services for Linux. IBM IGS will be offering Operational Support Service - Support Line, Linux for S/390. You will have to contact the Linux for S/390 Linux distribution partners (SuSE or TurboLinux) to see what offering will be made available from the Linux distribution partner.

Question:

Exactly which components of Linux for S/390 are covered by an IBM Support Line contract? Does it include all IBM supplied device drivers, both OpenSource and OCO?

Answer:

IBM will support IBM device drivers as available in the Linux for S/390 distributions from SuSE and TurboLinux whether OCO or open source.

Education for Linux for S/390

Question:

What kind of education is available for Linux for S/390?

Answer:

IBM Learning Services provides basic Linux education and will be adding a 3 day workshop for Linux implementation that is specific to S/390. This workshop will focus on distributions, installation, administration, security and more. It will also cover S/390 Virtual Image Facility and S/390 Integrated Facility for Linux. This class will be initially offered in November 2000 in the US with worldwide classes being offered starting in 1Q01. The WW course code for the new course will be EW04 - Linux for S/390 Implementation. Check with your IBM Learning Services in your country for more details and information about when this class will be offered.

Linux and VSE/ESA

Question:

What advantages does Linux for S/390 bring to VSE/ESA customers?

Answer:

VSE customers see two major benefits: First is new applications choices. A very large number of applications are available, or planned, for Linux for S/390. Most of those applications are not available on VSE itself. For example, VSE customers have expressed interest in WebSphere Application Server or SAMBA under Linux for S/390. Second is an opportunity to consolidate servers and platforms onto the same S/390 server that's also used for their VSE (and VM) workload. The average VSE customer has several different kinds of servers in addition to S/390. Linux for S/390 gives them a new option to reduce cost, leverage skills, streamline operations, enhance availability, and improve scalability.

Question:

What's the best way for VSE customers to leverage Linux for S/390?

Answer:

Many VSE customers may decide to implement major new applications under Linux for S/390. That's because tools such as WebSphere and Java[®] give them capabilities that aren't available for VSE alone. At the same time, most customers want to retain those robust, proven applications that are key to the success of their business. Existing VSE applications often represent a substantial investment in code, skills, and business processes that may be quite costly and risky to replace.

Question:

How can customers exploit the strengths of both VSE and Linux for S/390?

Answer:

The key is interoperability. VSE/ESA Version 2 Release 5 provides new e-business connectors based on IBM's Application Framework for e-business. VSE/ESA Version 2 Release 5 was designed with interoperability in mind. New e-business connectors consist of server code that runs under VSE, plus Java beans that run under Linux for S/390 (or any Java-capable client such as OS/390, Windows NT[®]/2000[®], AIX[®], etc.). The objective of these connectors is easy access to VSE resources such as VSE/VSAM files, DL/I databases, VSE/POWER, VSE/ICCF, VSE Librarian, and VSE consoles. For example, using beans provided by VSE/ESA V2.5, a Java programmer writing portions of an application for Linux for S/390 can access VSAM files without detailed knowledge of VSE. Complementary IBM middleware provides additional interoperability. For example, MQSeries enables standardized, secure communication between applications running in VSE and Linux for S/390. DB2 Connect gives Linux for S/390 applications access to production data stored in DB2 (DB2 Server for VSE Version 7) databases on VSE.



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