



IBM PowerVM Lx86 Release Notes for release 1.3.2.0





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Note

Before using this information and the product it supports, read the information in “Notices” on page 6.

Fifth Edition (October 2009)

This edition applies to the version 1.3.2.0 of IBM PowerVM Lx86 and to all subsequent releases and modifications until otherwise indicated in new editions.

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These release notes are for IBM® PowerVM™ Lx86 for x86 Linux® Applications (PowerVM Lx86) release 1.3.2.0. They are a supplement to the IBM PowerVM Lx86 Administration Guide.

Product and Support references for PowerVM Lx86

PowerVM Lx86 is offered as a standard feature with the purchase of all PowerVM Editions. For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page:

<http://www.ibm.com/planetwide/us/>

or

<http://www.ibm.com/planetwide/>

For more detailed information on PowerVM Lx86, visit PowerVM Lx86 for x86 Linux applications:

<http://www.ibm.com/systems/power/software/linux/>

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http://www.ibm.com/developerworks/linux/lx86/index.html?S_TACT=105AGX03

If you obtain your product from the DeveloperWorks web site, it is not supported by IBM support as mentioned above. For self-help, you can join an open forum to exchange information with other users and IBM.

Want to know more?

- Listen to our recent Webcast (intended for ISVs, but generally useful):
https://isvwebcast.on.raindance.com/confmgr/view_stored_doc.jsp?docId=92214445597031436579261482246
- Read the IBM Redpaper Getting started with PowerVM Lx86:
<http://www.redbooks.ibm.com/redpapers/abstracts/redp4298.html>
- Read the PowerVM Lx86 Administration Guide (PDF):
<https://www-304.ibm.com/jct09002c/partnerworld/wps/static/pdf/systempave041706.pdf>
- Join the discussion and ask questions at the developerWorks forum on PowerVM Lx86 for x86 Linux applications:
https://www.ibm.com/developerworks/forums/dw_forum.jsp?forum=1058
- Learn more at **IBM Linux->Linux on Power systems including System p and System i**:
<http://www-03.ibm.com/systems/power/software/linux/>
- Learn more at Linux on System p:
<https://www.ibm.com/systems/p/linux/index.html>

Changes in the 1.3.2.0 release

The 1.3.2.0 release adds the following improvements to PowerVM Lx86:

- Support for SLES 10 SP3, RHEL 4.8, and RHEL 5.4.
- Support for SSE and SSE2 x86 instructions (only on Power 6 servers), allowing a broader range of x86 applications to run.
- General performance improvements.
- Additional bug fixes.

The 1.3.1.0 and 1.3.2.0 releases do not support the following features:

- Support for SLES 9 SP3 and SP4. Customers wanting to use SLES 9 will need to use PowerVM Lx86 version 1.3.0 or earlier.

Registration Codes for Novell SUSE Linux Enterprise Server

The SUSE Linux Enterprise Server subscription for the PowerPC architecture includes a registration code for PowerPC hosts. Additionally, starting September 28, 2009 a second registration code, to be used exclusively for x86 architecture virtual machines hosted on PowerPC hardware via the PowerVM hypervisor, is included.

Customers wishing to deploy x86 virtual machines need to make use of the second registration code to register their x86 guests with the Novell Customer Center to receive updates, while continuing to use the PowerPC code to register their PowerPC hosts.

Customers lacking the second registration code to be used with x86 guests should follow the instructions here:

<http://www.novell.com/support/documentLink.do?externalID=7004469>

Administration Guide documentation updates

This section details updates to the Administration Guide for PowerVM Lx86 1.3.1.

Update 1: SE Linux and installation to non-default locations

This is an addition to Chapter 17, SE Linux support with PowerVM Lx86, on page 73 of the Administration Guide.

SE Linux and installation to non-default locations:

If the x86 World or the PowerVM Lx86 binaries are installed into somewhere other than the default locations, and SE Linux is to be used for translated x86 processes, the directories containing PowerVM Lx86 and the x86 World must be accessible by all restricted SE Linux domains. For example, if the x86 World is installed into /mnt/i386, please set the file context of these directories as follows:

```
chcon -t root_t /mnt
```

```
chcon -t root_t /mnt/i386
```

If these directories are not accessible by restricted SE Linux domains, some translated daemon processes may fail to start when SE Linux is set to enforcing mode.

Update 2: Running the automated installer

This is an addition to the "Examples of usage" section on page 89 of Chapter 20, Running the automated installer, of the Administration Guide:

Uninstall PowerVM Lx86 and the x86 World:

```
% installer.pl --uninstall Lx86 --uninstall x86world
```

When installing a particular x86 World distro using the --distro option, to find the list of valid arguments for the distribution, please type:

```
% installer.pl --help
```

This is an addition to the table in the "Non-interactive configuration file options" section on page 90 of Chapter 19, Running the automated installer, of the Administration Guide:

Non-interactive mode configuration switch name	Parameters and use
INSTALLER_SW_HOMEDIR	<p>Type String</p> <p>Parameters An absolute path</p> <p>Use Optional. This switch specifies the home directory path to escape from the x86 World to the home directories on the Power system. This option can only be specified when installing a new x86 World. You cannot specify this option when installing an x86 World from an archive, as the home directory escape is contained within the archive.</p> <p>There is no command line option for this switch. When installing from the command line, to create the escape to the /home directories on the Power system, run the linkx86 command after running the automated installer:</p> <pre>linkx86 /home</pre>

Update 3: Disk space requirements for new operating systems

This is a correction for Chapter 4, Disk space requirements for x86 World on page 14 of the Administration Guide:

The disk space for RHEL 5 Update 3 should read '935 MB disk space for software for a minimal installation', rather than 900MB.

This is an addition to Chapter 4, Disk space requirements for x86 World on page 14 of the Administration Guide:

The disk space for SLES 10 SP3 is 3.2 GB disk space for a full installation and 707 MB for a minimal installation. The disk space for the /tmp directory for a full installation is 897 MB; 195 MB for the /tmp directory for a minimal installation.

The disk space for RHEL 4 Update 8 is 7.1 GB MB disk space for a full installation and 854 MB for a minimal installation. The disk space for the /tmp directory for a full installation is 2.2 GB; 261 MB for the /tmp directory for a minimal installation.

The disk space for RHEL 5 Update 4 is 6 GB disk space for a full installation and 850 MB for a minimal installation. The disk space for the /tmp directory for a full installation is 2 GB; 230 MB for the /tmp directory for a minimal installation.

Upgrading and reinstallation options for previous installations of PowerVM Lx86

The 1.3.2.0 release supports upgrading from all previously released versions of PowerVM Lx86, including all 1.1.x, 1.2.x, and 1.3.x versions. Note that if you choose to upgrade the PowerVM Lx86 binary from a previous 1.1.x or 1.2.x installation, you will be prompted to update the location of the PowerVM Lx86 binaries and associated log files to locations that use the new powervm-lx86 directory and file naming conventions. You can use the existing directory locations, but the product binaries and log file will use the new naming convention.

PowerVM Lx86 CD and package structure

The PowerVM Lx86 CD structure is:

- powervm-lx86-<release_version>-<build_number>.tgz
- powervm-lx86-release-notes-<release_version>.txt
- powervm-lx86-release-notes-<release_version>.pdf

The PowerVM Lx86 directory structure within the tar file is:

- powervm-lx86-installer-<release_version>-<build_number>/installer.pl
- powervm-lx86-installer-<release_version>-<build_number>/lib/
- powervm-lx86-installer-<release_version>-<build_number>/resources/
- powervm-lx86-installer-<release_version>-<build_number>/doc/

To install PowerVM Lx86, copy powervm-lx86-<release_version>-<build_number>.tgz to the local machine, extract it and then, as root, run the powervm-lx86-installer-<release_version>-<build_number>/installer.pl script.

Documentation location

The PowerVM Lx86 Administration Guide and the PowerVM Lx86 Release Notes can be found in the following location in the tgz file:

powervm-lx86-installer-<release_version>-<build_number>/doc

which is a symlink to powervm-lx86-installer-<release_version>-<build_number>/resources/doc/RO

After installation, the PowerVM Lx86 Administration Guide and Release Notes can be found here:

<PowerVM Lx86 install location>/doc

which is a symlink to <PowerVM Lx86 install location>/installer/resources/doc/RO

Reporting a failure

If a Linux x86 application fails while being translated, an error is displayed. In addition, an error log is created in the /var/opt/powervm-lx86/log directory. You can change the location of the default log directory during installation. Log files are created for each running process that encounters an error.

Report the error to IBM Support. Include a description of the failure and what events preceded the failure.

Note: The reported error may be caused by an issue with the Linux x86 application being executed and may not be a problem with PowerVM Lx86.

Performance notes

Performance overview

There are various architectural differences between x86 and Power which can impact performance of translated applications. For example, translating

dynamically generated code like Java™ byte codes is an ongoing translation process, which can be expected to impact the performance of x86 Java applications which are using an x86 Java virtual machine. Floating point intensive applications may have some performance penalties. And finally, translating multi-threaded applications can incur an additional performance overhead as the translator works to manage shared memory accesses.

Functionality notes

Memory limit defaults to off in 1.3.2.0

In this release of PowerVM Lx86 the memory limit default is set to off to maximise performance of applications being translated.

If you want to limit the amount of memory used by Lx86, please read the Administration Guide section describing the use of the `MEMORY_MONITOR_TRIGGER_RATIO` in the configuration file.

Mandatory fields in the installer

When installing the 1.3.1.0 or 1.3.2.0 version of Lx86, it is now mandatory to provide a name, company name, and email address. In previous releases only the company name was required.

Known issues

There are some known issues with PowerVM Lx86. This section details those issues and any workarounds that are available.

nscd service fails when SE Linux is enabled in the x86 World and set to enforcing

On RHEL 4.x systems, when SE Linux is enabled on the Power system and set to enforcing mode (rather than permissive mode or turned off) and SE Linux is enabled in the PowerVM Lx86 configuration file, the x86 nscd service will fail to start. This is under investigation.

SE Linux file attributes in x86 World archives

If an x86 World archive is created on a system with SE Linux disabled, when extracting the x86 World archive onto a system with SE Linux enabled, the SE Linux file attributes will be incorrect. To fix this issue relabel the filesystem using the `restorecon` command in a translated x86 shell.

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