IBM z/VM V6.3 – Enhancements for IBM z13

January 2015

z/VM Version 6 Release 3

Frequently Asked Questions

Worldwide

ZSQ3027-USEN

z/VM Announcements and Version 6 Release 3

Question:

What did IBM announce on January 14, 2015, with regards to z/VM?

Answer:

IBM announced support for the IBM z13 family of processors

IBM Announced support for the IBM z13™ (z13) family of processors for both z/VM Version 6 Release 2 (V6.2) and z/VM version 6 Release 3 (V6.3). The following z/VM V6.3 enhancements were announced:

- More efficient use of CPU resources for improved price performance with support for simultaneous multithreading
- Support for twice as many processors (up to 64) when SMT is not enabled or as many as 64 threads when SMT is enabled for Linux workloads.
- Leading the industry with increased availability and reduced cost of ownership in network environments
- Sharing of OSA-Express Port Groups across z/VM systems within a Central Processor Complex (CPC) to deliver increased optimization of OSA-Express and reduced cost of ownership for IEEE 802.3 Link Aggregation networking environments
- z/VM 6.2 and 6.3 with PTFs support Crypto Express5S and enhanced domain support for Crypto Express4S and Crypto Express5S adapters when plugged in a z13

Question:

What support does z/VM 6.3 provide for simultaneous multithreading?

Answer:

z/VM 6.3 provides support for multithreading technology that extends per-processor core capacity growth beyond single-thread performance for Linux on z Systems IFL workloads with support for two threads per core in IBM z13. z/VM multithreading technology support enables additional price performance benefits over previous hardware generations and meets workload requirements transparently. z/VM V6.3 exploitation support for Simultaneous multithreading (SMT)**.**

z/VM V6.3 multithreading support increases the capacity of z/VM to perform multiple units of work simultaneously. When multiple virtual machines are active, multithreading allows more of them to execute at the same time, increasing overall throughput. This can lead to completing more transactions, faster response times, and increased resource utilization. In addition, z/VM multithreading support is transparent to guests; no guest customization or exploitation is required.

This support will be available on March 13, 2015 with the PTF for APAR VM65586.

Question:

Why would a customer want to utilize the Multithreading Technology capability with z/VM and the IBM z13™ (z13)?

Answer:

Utilizing multithreading is more efficient. It will allow more work to get done in a z/VM image while utilizing the same number of cores. This will boost productivity but may also allow server growth without incurring additional license cost for additional cores.

Question:

How many CPUs does z/VM 6.3 support on z13?

Answer:

CPU scalability has been enhanced in z/VM 6.3 to support up to 64 dispatching units. z/VM 6.3 on z13 supports up to 64 cores without multithreading enabled or up to 32 cores (and thus up to 64 threads) with multithreading enabled.

This support will be available on March 13, 2015 with the PTF for APAR VM65586.

Question:

Does this change the number of CPUs supported on Prior machines?

Answer:

No, z/VM V6.3 continues to support up to 32 logical processors on prior machines.

Question:

What support did z/VM 6.3 provide to increase availability and reduce the cost of ownership in network environments?

Answer:

z/VM 6.3 provides support for Multi-VSwitch Link Aggregation Support. This functionality, new with IBM z13, allows a port group of OSA-Express features to span multiple virtual switches within a single z/VM system or between multiple z/VM systems. Sharing a Link Aggregation Port Group with multiple virtual switches increases optimization and utilization of the OSA-Express when handling larger traffic loads. Higher adapter utilization protects customer investments, which is increasingly important as 10 Gigabit deployments become more prevalent. This enhancement makes it possible to do VSwitch Link Aggregation with OSAs shared with other z/VM logical partitions, lifting the previous restriction of requiring dedicated OSAs.

This support will be available on June 26, 2015 with the PTFs for APARs VM65583 and PI21053.

Question:

Why is sharing OSAs in a Link Aggregation Port Group better?

Answer:

Sharing the OSA is better for 3 reasons. 1) You do not need as many OSA's in total. Sharing them across multiple virtual switches lowers the cost. 2) Sharing the OSA's provides for better utilization because z/VM CP can spread the network traffic across multiple interfaces. 3) It provides easier and better redundancy because we have more shared interfaces that can all fail over each other in the event of problems

Question:

How many Crypto domains per adapter does z/VM support?

Answer:

With this z/VM now has enhanced domain support. This allows 85 domains to be used on Crypto Express4S and Crypto Express5S adapters when plugged in a z13.

Question:

What additional HW functions are supported by z/VM with the announcement?

Answer:

The detailed list of functions available is on the z/VM web pages at:
http://www.vm.ibm.com/zvm630/

Question:

Is z/VM 5.4 supported for the IBM z13?

Answer:

There is no support for z/VM 5.4 on z13. z/VM 5.4 is not compatible with z13. The IBM zEnterprise EC12 and IBM zEnterprise BC12 are the last System z servers supported by z/VM V5.4 and the last System z servers that will support z/VM V5.4 running as a guest (second level). z/VM V5.4 will continue to be supported until December 31, 2016, or until the IBM System z9 EC and IBM System z9 BC are withdrawn from support, whichever is later. Refer to Withdrawal Announcement 912-144, (RFA56762) dated August 7, 2012.

Question:

Where can I find lifecycle information on z/VM releases?

Answer:

Access lifecycle information for z/VM at
http://www-01.ibm.com/software/support/systemsz/lifecycle/**.**

Question:

Were there any statements of direction announced for z/VM on January 13, 2015?

Answer:

Yes, here are the VM items from the RFA:

- z/VM support for Single Instruction Multiple Data (SIMD): In a future deliverable IBM intends to deliver support to enable z/VM guests to exploit the Vector Facility for z/Architecture (SIMD).
- Enhanced RACF password encryption algorithm for z/VM: In a future deliverable an enhanced RACF/VM password encryption algorithm is planned. This support will be designed to provide improved cryptographic strength using AES-based encryption in RACF/VM password algorithm processing. This planned design is intended to provide better protection for encrypted RACF password data in the event that a copy of RACF database becomes inadvertently accessible.
- Removal of support for Expanded Storage (XSTORE): z/VM V6.3 is the last z/VM release that will support Expanded Storage (XSTORE) for either host or guest usage. The IBM z13 server family will be the last z Systems server to support Expanded Storage (XSTORE).
- Stabilization of z/VM V6.2 support: The IBM z13 server family is planned to be the last z Systems server supported by z/VM V6.2 and the last z systems server that will be supported where z/VM V6.2 is running as a guest (second level). This is in conjunction

with the statement of direction that the IBM z13 server family will be the last to support ESA/390 architecture mode, which z/VM V6.2 requires. z/VM V6.2 will continue to be supported until December 31, 2016, as announced in announcement letter # 914-012.

- Product Delivery of z/VM on DVD/Electronic only: z/VM V6.3 will be the last release of z/VM that will be available on tape. Subsequent releases will be available on DVD or electronically.

See a full set of the current statements of direction at
http://www.vm.ibm.com/zvm630/zvm63sum.html

Question:

Can z/VM still be ordered on tape?

Answer:

Yes, however z/VM V6.3 will be the last release of z/VM that will be available on tape. Subsequent releases will be available on DVD or electronically.

Related Information

Question:

Where can I go for more detailed information about z/VM V5.4, V6.2 or V6.3 and Linux and System z technology?

Answer:

See the following links for additional information:

General z/VM information:

- z/VM V5.4 resources: http://www.ibm.com/vm/zvm540/
- z/VM V6.2 resources: http://www.ibm.com/vm/zvm620/
- z/VM V6.3 resources: http://www.vm.ibm.com/zvm630/
- Linux on System z: http://www-03.ibm.com/systems/z/os/linux/

z/VM education:

- http://www.ibm.com/vm/education

z/VM publications:

One basic z/VM publication is planned to be shipped in printed format automatically when you order the z/VM V6.3 base product. Publications are also available as Adobe PDF or IBM BookManager® files and are provided in the IBM Information Center, on the IBM Online Library: z/VM Collection on DVD and on the IBM z/VM Web site at: http://www.ibm.com/vm/library

Or from the Publication Center at: http://www.ibm.com/shop/publications/order

FAQs:

- A Summary for z/VM: http://www.vm.ibm.com/zvm630/zvm63sum.html

Programs and Products for z/VM:

- IBM Licensed Programs available for z/VM: http://www.ibm.com/vm/related
- Independent Software Vendor products available for z/VM: http://www.ibm.com/vm/vendor/

Programs and products for Linux:

- Linux program requirements: http://www.ibm.com/systems/z/os/linux/dist.html

Redbook/Redpapers:

IBM Redbooks/Redpapers are developed and published by the IBM International Technical Support Organization (ITSO). They are intended to develop and deliver skills, technical know-how, and materials to technical professionals of IBM, Business Partners, and customers. For access to the latest Redbooks and Redpapers see the following URL:
http://www.ibm.com/redbooks/

Linux Distributions:

- Novell SUSE Linux: http://www.suse.com/
- Red Hat: http://www.redhat.com/

IBM Global Services Solutions:

IGS Linux Solutions: http://www.ibm.com/services/

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