

PERFORMANCE NEWS

Issue 1 – Winter 2013

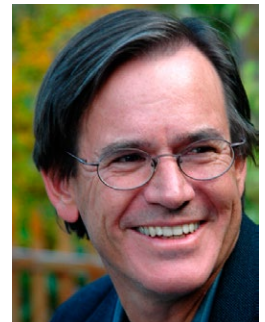
z/VM, Linux and Cloud on System Z Updates



What's new at Velocity Software?

BY BARTON ROBINSON

Version 4 of our Performance Management Suite, zVPS, has been available for 18 months now and about half of our customers have upgraded. zVPS addresses four different areas: Performance Analysis, Capacity Planning, Operations, and Chargeback. Version 4 is also the basis for our full cloud enablement function, zPRO. Looking at Version 4, this is what is new:



Performance Analysis

- Mixed mode analysis, with significantly better processor analysis capabilities when both IFL and GP are in the same CEC.
- VSE Analysis to help installations running z/VSE under z/VM.
- Improved Linux disk performance instrumentation.
- Virtual processor reporting – allowing a better understanding of how work is distributed across the Linux Virtual CPUs.

Capacity Planning

- The capability to combine Linux workloads and report into one resource consumer graph extends capacity planning to VMWare and other virtualization platforms.
- Weekly and monthly charts can be generated automatically. After seeing that many of your charts are done manually, we've done more to make your job easier.

Operational Support

- Enterprise Management console support with extended SNMP alerts.
- zALERT – a packed alert function to aid in your implementation of full alerting.
- zOPERATOR – available soon, as a function operator console.

Chargeback

By grouping applications across nodes, and grouping nodes together the chargeback capability is extended in both the application area, as well as VMWare and distributed functions.

There is a lot more in Version 4, with a central "Velocity Software Maintenance Server" that will let you easily, without reading the book, update your products, tailor your products, and reduce time involved in administering your performance management suite. The PORTAL function also allows administration of our products via a browser.



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For those of you that would like onsite assistance in upgrading or setting up zALERT for operations, please make a request – in most cases, we provide this at no charge. Phone support is always available.

CLOUD

It doesn't matter if you think the "cloud" concept was being used on VM370 in the 70's (I would probably agree). Today is a different world, and z/VM still must be sold to Management. Today, z/VM penetration is growing worldwide, and we at Velocity Software are seeing more installations moving to z/VM to solve many different issues. But there is still resistance, sometimes for political reasons, sometimes a lack of understanding. Even at the most recent CMG (Computer Measurement Group) meeting, people would discuss "VM", and I was forced to clarify if the discussion was about VMWare or the "Real VM". Our problem is more mindshare and our "legacy" reputation ("VM, that was PROFS, right?").

There are 3 people that need to be convinced that Linux running on z/VM is a good thing: the Finance person responsible for budget, the architect responsible for functionality, and the applications person responsible for company application development. A cloud solution is something they all know about, typically focusing on the economics and time savings. A major strength for z/VM has always been R&D, not batch, not high transaction systems, but straight R&D. z/VM provides the developers access to resources and programs in a secure and flexible environment better than any other platform, and that is the basis for being a powerful "cloud" implementation.

The following scenario is a good example: A bank was planning for a large project that would save millions. The plan was to acquire many new hardware (rack) servers and give them to the applications people for development. In looking at their z/VM system, there were sufficient extra resources to implement a full cloud architecture – at no extra cost in hardware

(extra resources because Linux on z/VM worked a lot better than the capacity plan). Creating an LPAR for this one R&D project, installing DIRMAINT, zVPS and zPRO should normally take 2-3 days at most (in this case it took slightly longer). Once created, the applications people didn't wait for delivery of their servers, didn't wait for the installation, didn't wait for provisioning of those servers; they just cloned the servers they needed when they needed them. The time to implement is reduced, that saves the company money.

Another scenario – at a Redbook residency in Poughkeepsie where Rich Smrcina and I participated in the cloud part of the book, I challenged Rich to clone 100 Oracle servers and make them operational. On “test day”, he cloned 100 servers in 70 minutes, and brought up 80 of them over the next hour – only 80 because the small test system was not sized to run that many servers and storage, and paging became an issue.

Cloud is an enabler, both in mindshare and in enhancing the platform's image. Even a small cloud deployment to demonstrate to applications people will be beneficial to their understanding. When the applications people are convinced, success of the platform follows.

If you are ready to implement a cloud environment, Velocity Software will provide onsite assistance in implementing zPRO on a “long term” free trial basis to give you the opportunity to demonstrate to the 3 people that matter, a real cloud architecture that includes full chargeback, operational support, and all the rest of real performance and service management. Let us know if you would like to start your free trial.

Performance Matters

The most important part of our job here at Velocity Software is to assist our customers in optimizing their performance. Even non-customers can optimize their performance with our “Linux Hints and Tips” page found on www.velocitysoftware.com.

There seems to be lots of confusion about how to set SHARES correctly. I personally think the following is working as designed, the design is good, but the design is being abused. This shows 3 looping servers, two of them with relative share 100, one with relative share 200. Most people with “performance responsibility” can't explain this, but continue to set SHARES that will cause this problem.

Screen: ESAUSP2 Velocity Software Test

1 of 3 User Percent Utilization

UserID	<Processor>	
	Total	Virt
Time		
00:14:00		
ROBLX2	68.71	68.68
ROBLX1	14.00	14.00
ROBLNX1	13.99	13.99

The full analysis can be found at <http://www.velocitysoftware.com/relshare.pdf>.

Another question about SHARES is “should you use RELATIVE or ABSOLUTE?” Since it is the widespread abuse of large relative SHARES that causes the above problem, this will help your tuning by doing this right.

BARTON ROBINSON IS FOUNDER
AND CTO OF VELOCITY SOFTWARE.

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Net-SNMP with the Velocity Software MIB for SUSE Linux Enterprise Server Systems

BY DENNIS ANDREWS

The Velocity Software MIB is available for SUSE Linux Enterprise Server (SLES) systems in three different editions. The first is a repackaging of Net-SNMP that includes the Velocity Software MIB. The second is an additional new RPM that packages a shared library that contains the Velocity Software MIB. The third is its inclusion in certain releases of SLES. The preferred version depends on the release of SLES.

SLES 9

For SLES 9, only the repackaged Net-SNMP with the Velocity Software MIB is available. The current release of this has a CMS name of NS522AS9 S390XRPM for 64 bit systems and NS522AS9 S390RPM for 31 bit systems. This can be renamed under Linux to identify it as net-snmpp-5.2.2-11.s9.s390x.rpm. Once installed, the RPM command will display this as:

```
sles9x:~ # rpm -q net-snmpp
net-snmpp-5.2.2-11
```

After installation, the rocommunity name needs to be configured in the snmppd.conf file in /usr/local/share/snmpp/. For more detailed information look in the NS522 README file in the SNMP Libraries download area. It contains updates and installation details.

SLES 10

The Velocity Software MIB is available for SLES 10 as either a repackaged Net-SNMP RPM, or as a shared library RPM. It's recommended to use the shared library RPM. This provides easier access to the distribution's Net-SNMP updates that your site may be interested in. The current release of the Velocity shared library RPM for SLES 10 SP1 to SP4 has a CMS name of LV11SA S390XRPM. This can be renamed under Linux to identify it as libvsi-1-1.s10.s390x.rpm. The RPM command will display this as:

```
sles10s3:~ # rpm -q libvsi
libvsi-1-1
```

Similarly to SLES 9, after the installation the rocommunity name needs to be configured in the snmppd.conf file, except that with SLES 10, the file is located in /usr/share/snmpp/. Also, with the shared library RPM, the snmppd startup script needs to be updated so the snmppd daemon process is niced to -10 at startup time. This is important so that the daemon will get the dispatching priority it needs for a timely response to data requests. The snmppd startup script is located in the /etc/init.d/ directory. Just add -10 after startproc to the line that begins with startproc \$SNMPPD. Further information and more detail is available in the SLES10 README file in the SNMP Libraries download area.

SLES 11

A version of the Velocity Software MIB is included as part of the Net-SNMP that comes with SLES 11. In SLES 11, Net-SNMP has been split into multiple RPMs. We require three of them. They are:

```
net-snmpp-5.4.2.1-8.12.10.1.s390x.rpm
libsnmpp15-5.4.2.1-8.12.10.1.s390x.rpm
snmpp-mibs-5.4.2.1-8.12.10.1.s390x.rpm
```

Once they are installed then the rocommunity parameter will need to be configured in snmppd.conf just as in the other releases. In SLES 11, this is located in /etc/snmpp/, and just as in the shared library, the snmppd startup script will need to be modified to nice the snmppd daemon to -10 at startup time. This will enable the snmppd daemon to get the dispatching priority that it needs for a timely response to a request for data.

The snmpd startup script is located in the /etc/init.d/ directory. Just add -10 after startproc to the line that begins with startproc \$SNMPD. For the latest notes on SLES 11, check the SLES 11 README file in the SNMP Libraries download area.

The status of the Velocity Software MIB for Red Hat Enterprise Linux (RHEL) will be reviewed in the next quarterly newsletter.

DENNIS ANDREWS IS SENIOR SOFTWARE DEVELOPER AT VELOCITY SOFTWARE.

Velocity EMEA

BY MAGNELIA NECOY

Exactly 5 years ago we decided to expand into Europe with the opening of a new Velocity Software branch in Germany. After 20 years in the Big Iron Business, and with more and more companies running workloads on the most reliable and secure virtualization platform in the industry, we felt it was time to offer a full service office in EMEA.

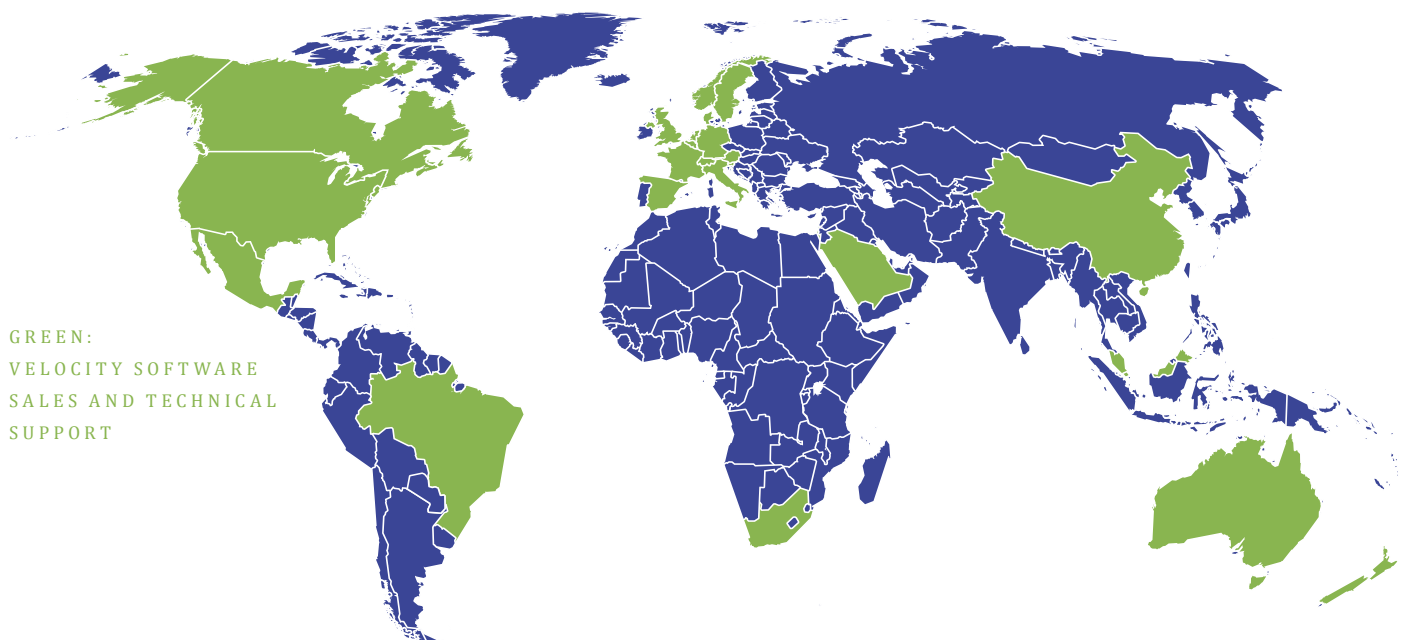
Our objective was to be able to provide local support and assistance to our existing customers, as well as company growth in new markets and geographies. Our global network strategy and experience in the mainframe business, combined with the results of our market research, reinforced this decision.

Persistence over the past five years has helped us expand our network and business successfully. Today we have customers in over 14 countries. One of the companies that trusts our tools and expertise with managing their z/VM and Linux on system Z environment is Barclays, a global financial services provider with offices and branches around the globe.

We are happy that Paul Garment from Barclays agreed to share the bank's success story with Linux on Z. Enjoy the article on the next pages!

MAGNELIA NECOY IS EMEA DIRECTOR AT VELOCITY SOFTWARE.

Velocity Software's Sales and Technical Support Map



With z/Linux on Fast Track – The Success Story of Linux on System Z at Barclays

BY PAUL GARMENT

In 2009 Barclays Bank started a project to design and build a mainframe infrastructure that would provide High Availability and improved Disaster Recovery. A new testing environment was built and the plan was to move all the 2nd level z/OS systems off z/VM and into the environment. This signalled the end of an era and the demise of z/VM.

However, a decision made several years earlier to deploy new x86 based applications onto Linux systems had proven so popular with designers and architects that there was difficulty keeping up with demand. In May 2010 the mainframe group was approached to run Linux on Z and this proved to be the moment that secured the future of z/VM at Barclays.

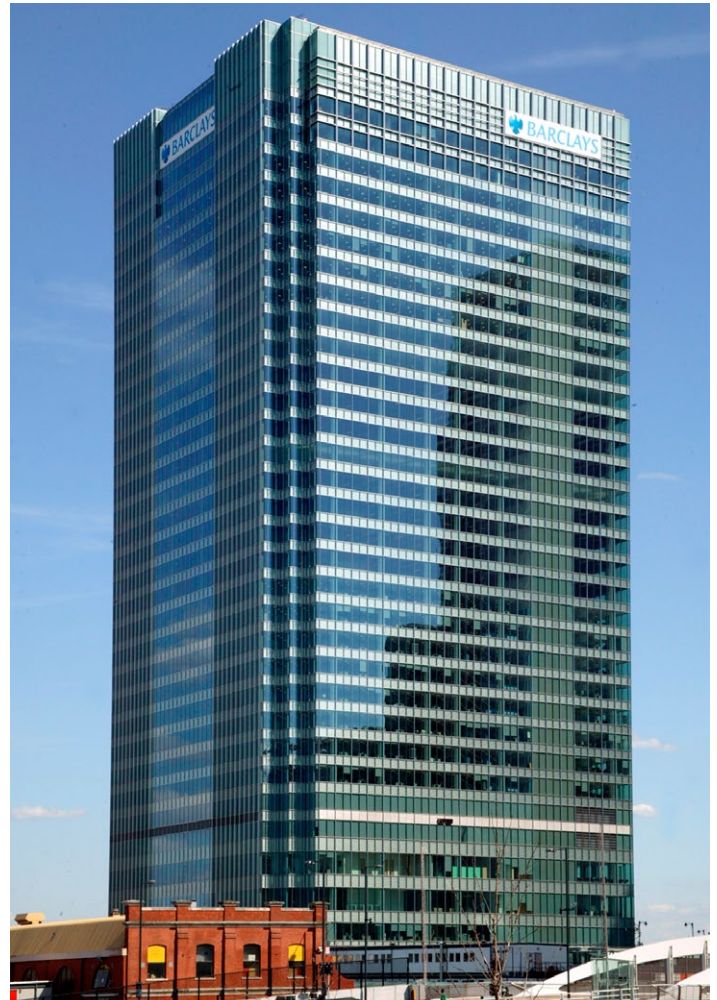
A meeting was convened and it was decided that this was an ideal opportunity for Barclays to become one of the UK pioneers with regards to hosting Linux on System Z. In collaboration with IBM we designed and built what is known as our Virtual Hosting Environment. The VHE consisted of two development and two live LPARs split over two physical CECs, each in a separate physical location.

Each CEC would have three IFLs split 80/20 in favour of the production LPARs. Production systems would have 32GB main memory with z/VM 6.1 installed, hosting four RHEL 5.7 servers running a Message Broker utility.

Message Broker was installed and setup with inbound and outbound messages being handled by each server on a 'Round-Robin' basis. Initially two servers could handle the message throughput, so in the event of problems with a bank of DASD or an LPAR on one CEC, the two servers on the other CEC would be able to process the traffic.

Neither z/VM nor Linux had ever been run as production systems on any mainframe which meant that both had to be approved as certified operating systems within Barclays.

Once approval had been granted it was down to building the environment. This included installing all software,



undertaking product evaluations, building Linux guests, helping with application development and the training of staff. The following all required addressing:

- Security
- DASD provisioning
- Change Control
- Software Asset Management
- Hardware Asset Management
- Software / Hardware Licensing
- Incident queues

- Problems queues
- Operational training
- Operational documentation
- Support documentation
- Connectivity to distributed SAN switched fabric
- Virtual Tape Servers
- Backups and Restores

zVPS was installed for performance monitoring and has proved to be an invaluable asset.

On December 4th, 2011, the production systems went live, and in January 2012 the first application started to utilize the Message Broker Linux servers, generating 15 thousand messages a day. In November 2012, the sixth application completed its migration, and the number of daily messages processed had risen to an average of 28 Million! In early 2013 two more applications are due to migrate onto the platform.

Despite this being a major programme of change the bank is delighted with the results and the performance of Linux on Z.

Through the introduction of Linux on Z we have greatly improved our ability to take on new applications and services. We now have a much more reliable and flexible IT infrastructure and this is not only a benefit for the Bank's IT but also for our customers around the world. Significantly reducing operating costs with Linux on Z, makes a decisive argument for the technology and demonstrates Barclay's determination to be pioneering in its attitude towards adopting new business solutions.

Hyperswap capability using XDR and PPRC has recently been implemented, as have our new Disaster Recovery LPARs.

z/VM 6.2 SSI is in the process of being implemented and an evaluation of zPRO will start shortly. 2013 looks like being another busy year as we strive to build a reliant, resilient world class service.

PAUL GARMENT IS A Z/VM SYSTEMS
PROGRAMMER AT BARCLAYS.

About Barclays:

The Barclays history starts in 1690, when John Freame and Thomas Gould start trading as goldsmith bankers in Lombard Street, in the City of London.


Today Barclays is a major global financial services provider engaged in personal banking, credit cards, corporate and investment banking and wealth and investment management with an extensive international presence in Europe, the Americas, Africa and Asia. With over 300 years of history and expertise in banking, Barclays operates in over 50 countries and employs 140,000 people. Barclays moves, lends, invests and protects money for customers and clients worldwide.

www.group.barclays.com

VM WORKSHOP

LEARN z/VM AND LINUX ON SYSTEM z FROM THE EXPERTS

2013



The VM Workshop is a grassroots non-profit organization comprised of customers, ISVs, and business partners with an interest in the use and growth of the z/VM platform and Linux on System z. The original VM Workshops were held during the 70s, 80's and 90's at universities around the US and Canada.

This newly formed re-birth of the popular VM Workshops of the past is being re-launched to bring back the low-price, high-quality focus that was so successful in the early days of VM.

All funds paid to the VM Workshop are used on the events and attendees. The goal is to provide a forum for z/VM education with topics that are relevant to customers supporting z/VM and Linux on System z in today's IT environment.

Threads will include VM and VM maintenance, Networks and VM, Tools for VM, labs covering introductions to VM and Linux on VM, and more.

Inexpensive dorm rooms and nearby hotel accommodations are available to make attending the VM Workshop one of the most cost-effective conferences available.

Whether you are new to z/VM or Linux on System z or an experienced master, don't miss this great opportunity to take your skills to the next level for z/VM and Linux on System z!

WHEN:
June 20-22, 2013

WHERE:
Indiana University –
Purdue University
at Indianapolis

WORKSHOP FEE:
\$100.00 per person

**Learn More &
Register Today at**
VMWorkshop.org



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2013 System Z Events and Conferences

Looking to improve your System Z knowledge and skills in 2013? Here are some of the System Z events we will be attending in the upcoming months. Check our next newsletters and social media sites for updates.

Events North America:

21-24 April: CA World

Mandalay Bay Resort and Casino, Las Vegas, NV

20-22 June: VM Workshop

Indiana University-Purdue University (IUPUI)
Indianapolis, IN

11-16 August: SHARE

Hynes Convention Center, Boston, MA

30 Sept-4 Oct: IBM System Z Technical University

Washington Hilton, Washington, DC

4-8 November: CMG

La Jolla, CA

12-15 November: SUSECon

Disney's Coronado Springs Resort, Lake Buena Vista, FL

Events EMEA:

22-24 April: GSE Germany

Frühjahrstagung z/VM, z/VSE, Linux auf System Z
The Westin Leipzig, Germany

10-14 June: IBM System Z Technical University

Munich, Germany

5-7 June: GSE Jahrestagung

Dresden, Germany

4-5 November: Annual GSE UK Conference

Whittlebury Hall, UK

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