Velocity Software, and the Economics of z/VM

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Agenda items covered

- Velocity Software
- What keeps executives up at night?
- Why Linux on z needs consideration
- Velocity Software's contribution

Velocity Software

Global company with customers in 20+ countries

Founded 1988 to provide VM performance management

Headquartered in Silicon Valley

Offices in California, Ohio, Wisconsin, Texas

EMEA HQ in Mannheim, Germany

Mission: Enhance and modernize the z/VM platform

What keeps executives up at night (this year)?

Environmental

- Carbon footprint – when is your company “neutral”?

Energy

- Cost factors (especially in 2022?)
- Carbon footprint factors

Availability (outages due to more extreme weather events)

Flexibility (data center, cloud)

People / skills

What keeps executives up at night (this year)?

Environmental

- **Citi Vows to Back $1 Trillion in Sustainable Activities by 2030**
- **Bloomberg: “**On her first day as CEO, Fraser announced Citigroup would achieve net-zero greenhouse-gas emissions in its financing activities by 2050. The bank has said it will produce an initial plan for reaching the goal in the coming year.**”**

With the European Climate Law, the EU is committing to carbon neutrality by 2050. What does that mean in practice?

(This is REALLY GOOD for LinuxOne and Linux on z!)

Energy, Carbon Footprint – Why Linux on z?

Environmental – power / energy considerations

- Power requirements **major** consideration in 2022
- Many Data centers have major restrictions based on power
- Major cloud providers build data centers close to power plants
- Data centers move because of power considerations

Why LinuxOne, Linux on z? Reduced power requirement

- Compare the power requirements for “x” vs “z”. (4:1?)
- “Cloud” is not carbon neutral
- (Our colo manager asked if our mainframe was really turned on?)
- Executives who have committed to LinuxOne can feel good!

Flexibility is critical to cost management

Data center relocations

- Power cost differs geographically
- Outages from weather, fires, other environmental
- (In California, recent past, many data centers moved due to fire)
- In Germany, is data center relocation viable (power costs up 150%?

Why Linux on z from flexibility perspective?

- Velocity Software moved data centers over the internet
- "VelocitySoftware.com/MetaltoCloud" (2 days to full cloud, z15)
  - Cloned 200 severs in minutes
- Moving virtual servers geographically is common
- Moving standalone servers, applications not trivial

Flexibility / reliability (why 32 vcpu, 100gb?)

Server creation / modification

- Servers are over-sized to meet future workload requirements
- Adding hardware problematic, wiring, power requirements
- Avoid Changes to hardware , get largest available

Why LinuxOne, Linux on z? Huge additional savings!

- Servers dynamically sized to meet current requirements
- Servers resized dynamically to meet changing requirements
- **Hardware costs reduced because of flexibility**

See zVRM to manage server CPU and CMM…

LinuxOne Summary: Environmental Savings

Carbon footprint smaller than any other platform

- Power requirements
- Hardware requirements
- Space requirements

Offers Flexibility, saving not available on other platforms

- Moving virtual servers between data centers fast
- Re-sizing servers to meet current workload requirements
- Avoid “small” capital purchases/upgrades
- Flexibility not easily done on real servers

Further Reducing Carbon Footprint (Veloctiy)

If already 4:1 savings from moving to LinuxOne, don't stop there

Large savings if you increase processor utilization 10%

- **10% less hardware needed**
- **10% less software licenses needed**
- **10% less energy needed**
- **10% better carbon footprint**

Higher utilization requires management

- **Manage throughput**
- **Manage response time**

Velocity Software Carbon Contributions

Our objective for 30+ years: Reduce customer's z/VM Costs

- Manage Performance to higher utilization
- Reduce Hardware (and software) requirements
- Support a reduced carbon footprint

Velocity Software Performance Management Offerings

- zVPS for performance management
  - zOPER for operations console
- zTUNE for fast performance problem diagnostics
- zVRM: dynamically size servers for workload requirements

Performance Management Components

Four "pillars" of performance management

- Performance Analysis to diagnose problems
- Capacity Planning / Trend Analyses
  - Understand trends and future requirements
  - Avoid performance issues in future
- Accounting and Chargeback
  - Encourage user good behavior
  - Align IT with Business Focus
- Operational Alerts when potential issues
  - Detect performance issues as soon as possible

Performance management must include all 4

zVPS for z/VM, Linux (and VSE) Performance Management

zVPS is the low cost solution for z/VM and LinuxOne performance management

- Modern web interface for all components
- Minimal Operational cost of Linux agents (.1% per server)
- Accuracy of data (virtualized, SMT), high capture ratios
- **VSE, CICS (no charge feature of zVPS).**
- **zOPERATOR (no charge feature of zVPS)**
- Distributed server performance management at no charge

zVPS Provides ability to greatly increase utilization and lower costs

VELOCITY SOFTWARE

PROVEN PERFORMANCE

zTUNE – Automated Performance Analysis

Automated Tuning Recommendations

Rules Based on our 40+ years of experience

Configuration check for best practices

Health check

Ensure highest level of performance

Incudes Help with resolving Performance Problems

- Velocity provides assistance in all areas of Linux on z/VM and z/VM performance management

zTUNE is an EXCLUSIVE from Velocity Software

zVRM and the case for the 32 CPU 100GB servers

The Velocity Software Resource Manager based on zVPS

Server modification “happens”

- More CPU, RAM needed and must be added
- Application resource requirements grow

Why Excessively large servers?

- Avoid future outage, hardware changes

zVRM, Velocity Resource Manager automates management

- CMM to reduce over sized storage when not needed
- CMM to provide storage as workload increases
- Vary vcpu on/offline to meet demand
- Allows definitions of oversized servers to operate efficiently
- Requires zPRO APIs, zVPS for data input
- Evaluates server by server

Skills and people are an issue

Skilled people are in high demand

- Partly pandemic related, partly retirements

Skill requirements (real)

- System installations and upgrades
- LPAR implementations
- Software installations / maintenance

Skill requirements (menial, mundane)

- Cloning Linux servers
- Server “upgrades” requiring directory update
- Any cloud will do…

Velocity Software Modernization Contributions

- **Modern interfaces critical with current generations**
  - VM is 50 years old, so are the (3270) interfaces…..
- **Velocity Software's zVWS**
  - The only general webserver for the platform
  - Allows APIs with z/VM (no SMAPI!, no Linux)
  - Utilized by zVPS for performance management interface
  - Utilized by zPRO to modernize z/VM management
  - Runs many websites including VelocitySoftware.com
  - Supports all current browser security
  - Installs in minutes, non-intrusive

Velocity Software Modernization Contributions

- **zPRO: Modernization and Simplification**
  - Web based interfaces vs 3270 based interfaces
  - **Full onprem cloud**, Installs in minutes (No SMAPI, Linux)
  - Server management for Linux, VSE, z/OS, TPF, and CMS users
  - Partners cloning z/OS for education purposes
  - Includes simple APIs for other products and functions
  - Create any servers in seconds
  - Full inventory readily available

zPRO by Velocity Software

Modernized z/VM Systems Management

- Simplified interfaces for RACF, VMSecure, DIRMAINT
- Includes modern zDIRECT for directory management
- Installs in minutes (not days, weeks, months)

Improve productivity for the skills available

- Allow delegation of “menial” tasks to users
- Replaces traditional 3270 only products with web based interfaces (zDIRECT, zSPOOL, zSCHEDULE)
- Management for Storage pools, SFS, LUNs, servers

zPRO Case Studies, task delegation

Linux administrators: Manage their own servers

- Users provided defined set of shared resources
- Create, modify and delete servers within constraints
- On prem cloud at a lesser cost than public cloud
- Pools of CPU, memory, LUNS, disks, IP addresses

Modernizing Operations

- Operations can stop / start / restart servers
- Password resets
- Other “contained” functions

zPRO Case Studies: Modernization, Productivity

Modernize systems programming – reduce 3270 requirements

Many zPRO No charge features to modernize z/VM

- zDIRECT – Optional directory manager, NON-Intrusive
- zSPOOL – Manage, view spool files,
- zSCHEDULE – Schedule events, one time, recurring
- Backup / Restore for z/VM
- Management for SFS, LUNs, RACF, VMSecure

Simplified management, Better productivity

Easy installation, reliable, inexpensive

zLinux With Velocity Software Summary

Reduced carbon footprint

- Managed performance allows higher utilization
- Managed servers allows for smaller footprints

Improved productivity for skilled systems programmers

- zVPS for Performance Management (VM, Linux, VSE)
- zTUNE for diagnosing performance problems
- zVRM for managing server resources
- zVWS to provide modern generalized webserver, APIs
- zPRO for modernization, simplification

Thank you! Questions?

Great to be back

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