

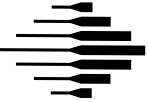
VELOCITY
S O F T W A R E

THE WORLD'S LEADING PERFORMANCE MANAGEMENT AND CLOUD ENABLEMENT SOLUTION FOR Z/VM AND LINUX ON IBM Z

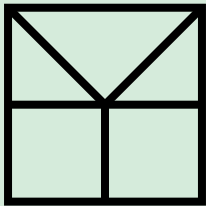




VELOCITY SOFTWARE INC

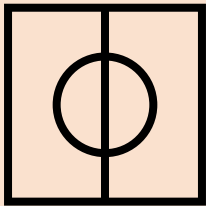


Velocity Software has remained the worldwide leader in performance management and now cloud focused management technologies for the z/VM Platform. Our zLOV (Linux on Velocity) suite of offerings are built on our unequalled Knowledge-based Intelligence (KI) engine that helps drive the following products:



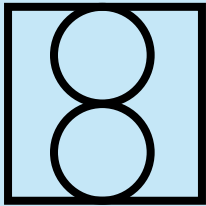
zVPS

an intuitive click-through real time performance monitoring for z/VM, Linux, z/VSE and z/OS along with support for applications like MongoDB and Oracle. And data collection for x86 based Linux machines and windows is still available at no additional cost.



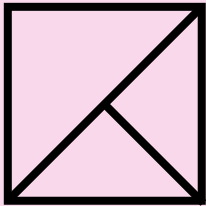
zTUNE

provides automated daily reports with recommended actions.



zPRO

provides a modern web-based on-prem cloud interface for z/VM systems with Linux, provides LPAR cloning and allows Ansible access with Velocity's SMAPI free API's.



zVRM

provides real time resource management, allowing you to do more with less hardware.

Leader in Performance Management

1988 Velocity Software ships XAMAP, the first performance monitor for VM/XA (now z/VM)

With the first performance products out for the platform, Velocity Software has always been first in meeting customer requirements. This is now a component of Velocity Software's Performance Suite (zVPS).

1995 Velocity Software adds network performance management

Still the only network performance monitoring solution operating on the z/VM platform. Fully integrated into our zVPS performance management solution.

1998 zTUNE is shipped to provide automated performance problem detection

zTUNE provides daily performance reports with recommended actions based on over 35 years of building KI policies designed to help maximize your IBM z System environments. This now includes reports for Linux with z/VM too.

2001 Velocity Software became the leader for Linux on z/VM metrics

Able to collect performance metrics from virtualized Linux guest and properly correlate the CPU data (Linux data does not properly reflect its usage when running in virtualized environments), we have gone on to provide a full performance management solution that has enabled us to help IBM with our customers resolve complex reporting issues and hardware bottlenecks. It is difficult to not even possible to have accurate chargeback or capacity planning if the input data is not being properly measured; "garbage in, garbage out".

2010-2020 Support for applications such as Java / websphere, Oracle, MongoDB, Docker, Spectrum Scale (GPFS)

All this data is available from our single pane of glass overview of your systems running Velocity Software.

2013 VSEMON for z/VSE Velocity Software's integrated performance monitoring for z/VSE.

Like with Linux, all z/VSE data is available from our single pane of glass.

2017 zPRO provides an on-prem cloud-based solution for managing z/VM and Linux.

zPRO continues to be used in many large and small installations, providing both a cloud architecture and to improve productivity of users and administrators. The cloning technologies work for both Linux, as well as LPARs helping to save organizations hundreds to thousands of workforce hours with these automated services. With our native webserver, zPRO, provides new users with a modern, intuitive interface. Green screens are no longer required to manage these systems.

2019 - Added zBACKUP, Linux Command Interface
2021 - Added zSCHEDULE
2022 - Added zSPOOL, DS8K Storage Server access
2023 - Added Kubernetes Interface, RSCS Management, zSEG
2024 - Added CPC Management, Ansible Playbooks for zPRO

2018 APIs are published allowing management of z/VM from other platforms without SMAPI

Velocity Software's API's provide easy, simple and an open interface for access to z/VM with Linux. Ansible playbooks have now been added to our offerings, creating even more flexible automation solutions for the platform.

2023 Openshift on Linux and on zCX

Fully integrated into our single pane of glass, Openshift is instrumented by Velocity Software to provide full performance management of containers.

2023 zVRM, the Velocity Software Resource Manager

Provides and automated mechanism to reconfigure virtual Linux servers in order to meet it's current workload requirements. It's Knowledge-based Intelligence tunes virtual CPU's and RAM helping to optimize overall system performance and free up expensive resources for more workloads.

2024 zVPS releases zOSMON

zOSMON is Velocity Software's performance package for z/OS. This product incorporates z/OS SMF data into zVPS!

2024 Velocity Software provides VSIPUMP for Grafana

To satisfy customer needs for alternative visualization tools such as Grafana, Velocity Software introduces the VSIPUMP utility, a mechanism to deliver data to InfluxDB and Prometheus. With this support, Grafana dashboards can be used, and/or created, to view performance data for z/VM, Linux, z/OS and VSE.

Leader in modernization for z/VM

1998 ESAWEB - now zVWS - is announced and is the fastest native webserver still available on the z/VM platform today

Any modernization of a platform needs to start with the ability to present data via browser. zVWS provides a generalized webserver that is used by customers for their own web based applications as well as by Velocity Software for the interface to all performance management and systems management functions.

95% Customer retention

Velocity Software works hard to both attract new customers and retain existing ones. With greater than 95% retention of customers that remain on z/VM over the last 35 years, it is easy to show that our customers believe in the products with support provided by Velocity Software.



Grafana display provided by zVPS to populate an InfluxDB database or a Prometheus database.

Managing z/VM with zVPS and zPRO



Enterprise Performance Management with zVPS

Everything an enterprise needs for managing IBM z Systems performance, and all from a single pane of glass:

- z/VM
- Linux on Z
- z/VSE and z/OS.
- Openshift on Linux and zCX
- TCPIP based networks
- Distributed servers (Linux, Microsoft and Apple)
- Applications like MongoDB, Oracle and Websphere



Optimizing Performance of your enterprise computing:

- Education provided either in the classroom or online.
- Tuning guides provided online with all the latest performance analysis information.
- Support and Subscription based zTUNE analyzes configurations and performance minute by minute, on demand or in daily reports.
- zVRM, the Velocity Resource Manager to dynamically manage Linux configurations to meet current workload requirements and optimize the resources available on your system(s).



Financial Management for your IT environments provided by zVPS:

- Capacity planning with a full performance database.
- Chargeback with complete and corrected information for Linux running in virtualized environments.
- Guidance and education provided.
- Complete Data Collection.
- The only platform that correctly calculates Simultaneous Multi Thread (SMT) activity back to a real single processor's usage.



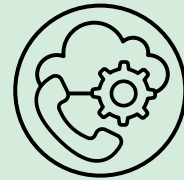
Minimize costs of data center management:

- Multi-platform Data Collection - an installation using zVPS may monitor many different platforms (Linux, Windows, VMware).
- Ability to collect data from 100s or even 1000s of servers at very low overhead.
- Cost of Data Collection - Cost in terms of resources used, should be kept to a minimum. And while many of the management tools available today require as much as 5% of the processor, Velocity's target is always less than 0.1% overhead.
- LPAR and Linux cloning with zPRO removes human error and greatly improves overall operational efficiencies.
- zVRM allows you to run more optimized workloads with less hardware.



Empower users in a protected "private cloud" environment using zPRO:

- Complete Server management for virtual Linux, z/OS and z/VSE
- Improve productivity for administering z/VM environments, without green screens.
- Ansible access with SMAPI-free API's.
- LPAR and Linux cloning.
- All under the control of your external security manager (ESM).



Operational support:

- Empower operations and reduce skill requirements with zPRO.
- zALERT to instantly alert system admins/support personnel of detectable problems.
- zTUNE provides performance reports with recommended actions.
- zVRM automates Linux virtual machine tuning in real time.
- zOPERATOR to view all console activities.
- A new data pipe that allows performance metrics to be shared with Grafana.
- And a team of experts that continue to even help IBM resolve complex issues.



Easy installation of software measured in hours:

- All products downloaded from the Velocity Software website.
- No system modifications, completely non-intrusive.
- Tailored easily to meet installation requirements.
- The ability to take IBM z systems from bare metal to a fully function cloud in 2 days:
- <https://velocitysoftware.com/MetaltoCloud>



Our strong commitment to the z/VM platform is the driving force behind the continuing growth of our worldwide customer base.

Since the beginning, our business philosophy has been to lead the industry in performance knowledge and products that utilize every new measurement facility within each release of z/VM. Our business philosophy of putting our customers first has indeed put us at the forefront of the z/VM performance market.

Optimizing Performance

ENTERPRISE PERFORMANCE MANAGEMENT

zVPS, the Velocity Performance management Suite for z/VM addresses four areas of managing performance:

- 1) Performance Analysis
- 2) Capacity Planning
- 3) Chargeback and Accounting
- 4) Operational Support

With a single pane of glass, zVPS provides management support for:

- z/VM, Linux, full network management.
- Systems management and applications management.
- z/VSE performance management.
- Performance management for distributed Linux and Microsoft servers.
- z/OS data collection and display functionalities.

OPTIMIZING PERFORMANCE THROUGH TECH SUPPORT AND TRAINING

Velocity Software offers responsive technical support to fully back our installations with product and z/VM expertise that includes ongoing product upgrades. Our highly trained support staff is knowledgeable and experienced with all aspects of z/VM performance analysis, capacity planning and private cloud enablement for IBM Z.

To ensure you receive full use of our products, Velocity Software provides on-site assistance for installation of Velocity Software products. Maintenance and support contracts include:

- Data analysis
- Report review and consultation
- Product Installation
- New implementations
- Review of specific procedures that use our products

zTUNE: z/VM AND LINUX ON IBM Z PERFORMANCE ANALYSIS SERVICES

The Performance Health Checker for Linux on IBM Z From the leaders in z/VM and z/Linux performance monitoring, zTUNE is a unique services offering for z/VM and Linux on IBM z (z/VM) installations.

Velocity Software offers full performance services by providing a subscription rules-based analysis of your system and expert based analysis of your data whenever requested. Once the data is electronically sent, Velocity Software will analyse and deliver recommendations that maximize your system performance.

Tuning Recommendations:

zVPS includes embedded, knowledge-based intelligence. Each time you run this report, zTUNE flags potential performance bottlenecks and provides tuning recommendations. Your data will be handled in strict confidence. At no time will Velocity Software distribute or make available information from any company unless permission has been granted.

zTUNE provides:

- Configuration Analysis to ensure optimal system settings are being utilized.
- Electronic-based Health Check for Linux and z/VM based on best practises.
- Analysis of your performance and capacity data.
- Recommendations to improve performance and capacity.

Performance Tuning Guide:

There is now a performance problem analysis and tuning section in the Velocity Software Customer Area. The Tuning Guide provides a concise

performance problem methodology that gives information about the zVPS screens/reports from general to specific. The contents start with Velocity Software's methodology for solving performance issues, which is very helpful in determining "Where do I start?". Whatever zVPS can measure, there is a section that helps explain what to look for on that system - z/VM, Linux, z/VSE, z/OS, and applications.

Performance Education

As an annual event associated with the VM Workshop, Velocity Software provides a no-charge performance workshop to provide education on analysis and tuning z/VM. This is also available to customers either onsite or remote to ensure installations can optimize their Linux on z environments. For more information visit our website or email us: info@velocitysoftware.com

zVRM - Velocity Resource Manager

The zVRM product was released in 2023 as a resource manager that automatically right sizes virtual servers to meet workload requirements. This is especially helpful when the specifications for a Linux system are done from a more x86 perspective. Often systems are built too large to perform efficiently when running on z/VM. zVRM evaluates data provided by zVPS each minute to configure Linux server CPU and storage resources based on workload requirements. Here are some key highlights:

- When too many virtual CPU's are in use, zVRM will use the zPRO command interface to vary them offline making the servers much more efficient and reducing overhead. Share settings are adjusted to ensure workloads are protected from runaway servers and excessive batch.

- Storage, or RAM is monitored as well as swap space and the CMM driver is used to return unneeded storage back to z/VM.
- If the workload changes, then CPU and storage / ram will be returned as necessary. zVRM can greatly reduce overhead and real storage requirements
- z/VRM is easily customized and maintained. All settings are done via zPRO and are easily added and adjusted.
- z/VRM saves money by better optimizing the use of expensive resources.



Performance Analysis with zVPS

zVPS addresses the needs for performance analysis, providing real time metrics on all facets of the performance of each of your servers, including z/VM, z/VSE, Linux and other distributed servers. zVPS allows immediate analysis of real-time problems.

Measuring Linux Issues

All other measurement facilities fail to measure Linux under z/VM for three main reasons:

- The overhead of collecting the data.
- The accuracy of the data.
- The inability to provide complete data collection.

Velocity Software's zVPS effectively addresses all of these issues.

Managing Performance in Today's Heterogeneous Environments

Managing performance today requires the ability to measure and manage all components of complex infrastructures. zVPS measures and provides performance data necessary to manage all of the following:

- z/VM performance and all subsystems for ALL releases of z/VM and Linux

Network Performance

The networks of today are increasingly based upon TCP/IP, which means critical business applications rely on its performance and availability. One can safely assume that your network assets are critical to business success. They must have high levels of accessibility and availability for the applications they are supporting. For this reason, monitoring for network problems have become a key element of our zTCP Monitor. zVPS and zTCP offer the best solution for metrics that measure the performance of both z/VM and your network resources.

zVPS is the solution for monitoring performance, availability, and service levels of your TCP/IP networks. It allows you to measure the traffic of every node in your network including IBM's System p, Solaris, HP, Dell, Windows, Microsoft, and VMWare. You then know immediately when a node stops responding, if there are implementation issues, or if the network is experiencing bottlenecks. It provides a complete and accurate view of your current environment as well as the metrics and relevant data to anticipate future problems.

With zVPS, you can monitor IP resources and data rates down to the Interface REAL-TIME Performance Data

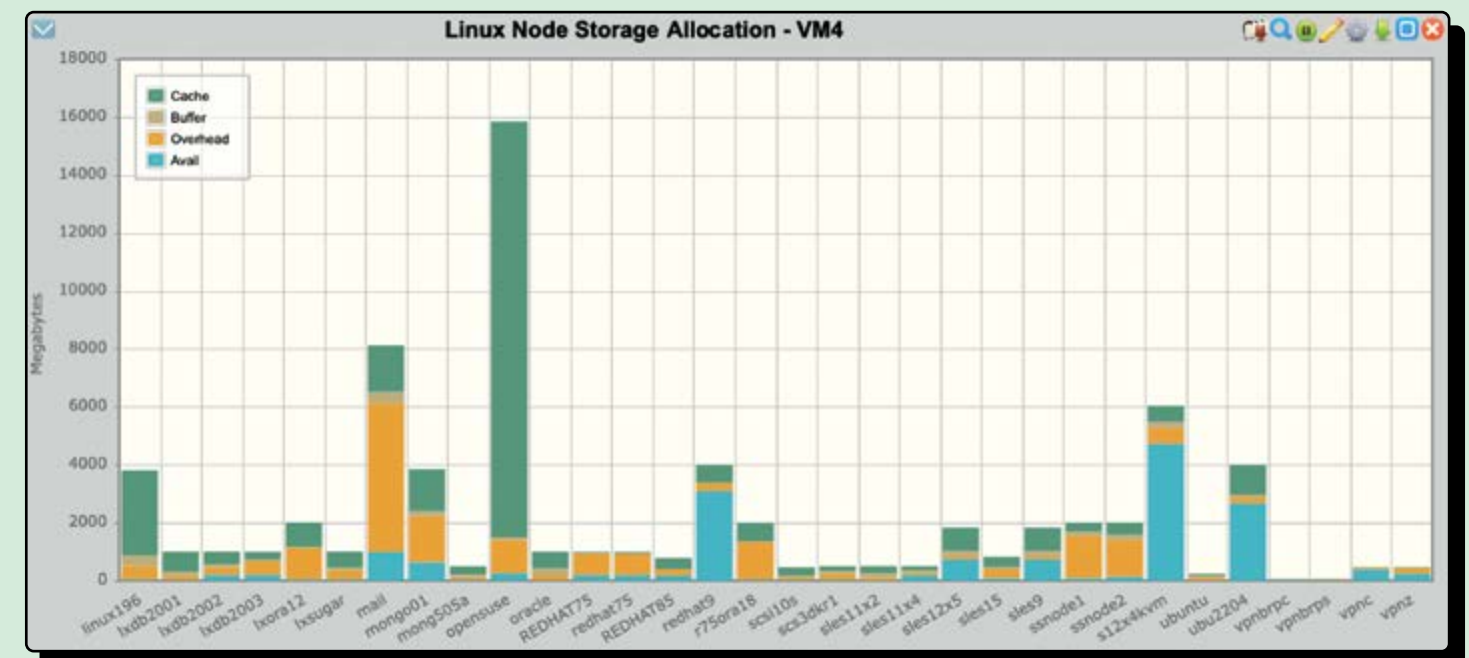
zVPS is the most comprehensive z/VM performance monitor on the market. If you have a performance problem, it's critical that you have all the information available to you. zVPS provides the necessary function to make that possible.

zVPS can display resource contention, consumption levels, transaction response times, user service levels and much more - for groups of users or for individuals. It can analyse CPU, storage and I/O performance in depth and lets you define classes of virtual machines for detailed study of applications, user communities and services. zVPS helps you understand system events as they unfold, to pinpoint problems and quickly correct them.

FEATURES AND BENEFITS

- Over 190 easily navigated screens from high-level overviews to detailed subsystem displays, including statistical summaries, full DASD cache analysis, SFS analysis, device analysis, Minidisk Cache, Oracle and Java screens, and even seeks analysis - all critical for performance management.
- Screens can be tailored to meet individual or installation requirements. This includes the ability to set alert conditions, highlighted in the user's choice of color and video characteristics.
- zVPS provides a powerful real time programming interface that allows you to program your own responses to performance criteria.
- zVPS presents data for Linux servers as well as Microsoft servers
- zVPS reports and presents your real time data in a very intuitive format. zVPS screens are automatically updated with up-to-the-minute performance information.

- zVPS provides significant resource savings over other monitors when monitoring users and transactions; even with seeks enabled.
- Based on the CP monitor facility, installation requires no "hooks" into the operating system.
- New releases of z/VM are supported immediately upon availability.
- zVPS also provides data extracts that can be employed with other CPM products such as MXG, MICS, Grafana, or Splunk.



Linux Storage by storage type.

Capacity Planning

Capacity Planning

zVPS provides a full performance database (PDB) and interfaces for popular enterprise capacity planning facilities such as MXG and MICS. The PDB includes data from z/VM and all the servers being monitored

Consolidation Capacity Planning

zVPS will measure the resource requirements of an application, prior to consolidation, to enable effective consolidation capacity planning. By measuring the servers prior to and after consolidation, Velocity Software renders consolidation capacity planning trivial.

Chargeback and Accounting

By providing complete and accurate data for both Linux applications and z/VM virtual machines, zVPS fulfills the need to provide data for chargeback and accounting purposes.

Linux Accounting

Installations requiring chargeback for Linux can use zVPS to provide accurate data on VMWare, Websphere, DB2, and Oracle servers by process and by user.

A 100% Capture Ratio ensures that you know exactly how much system resource is being used and by whom, down to the process level.

Instrumentation Measurement

zVPS will show system-by-system and application-by-application storage, processor and I/O requirements. In this way you can run each workload on the most appropriate platform. This feature contributes directly to the corporate bottom line by utilizing corporate equipment resources to their best advantage as well as utilizing hardware to its best efficiency.

Performance Database (PDB)

The PDB functions included contain the ability to extract and plot values, and to create your own reports.

Data feeds are also available for enterprise reporting for MXG® for enterprise reporting, including Linux and network performance data, and for MICS®.



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Operational Support

Operational Alerts

When managing hundreds or thousands of servers, automated analysis is required for all servers to ensure performance and capacity issues are immediately detected and reported. zVPS provides alerts via a 3270 interface, via a web-based browser and via SNMP alerts to integrate into your management consoles.

Operations Exception Monitoring and Reporting

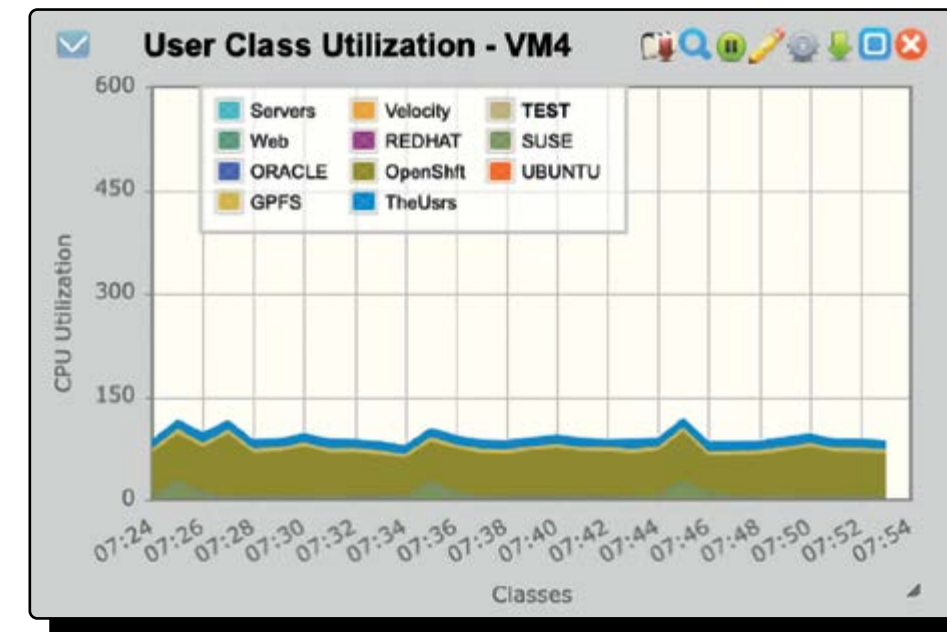
Problems are fixed before users notice. zVPS offers an automated facility that recognizes error and excessive load conditions (and other installation-defined exceptions) based on installation defined criteria. zVPS then optionally performs corrective action. Additionally, zVPS displays a visual representation of potential bottlenecks and system problems.

Full Operator Console

zOPERATOR provides a full console function using the existing 3270 technology as well as providing a browser interface. Fully integrated into zVIEW and zVPS provides a powerful console that sets Velocity Software apart from the competition.

Full Operations Alert Support based on zVPS Data

- zALERT provides a full alert function allowing alerts to be set for any range of performance metrics.
- With the ability to send alerts via SMS, email, or via SNMP to other management consoles, zALERT provides for the full operational needs.
- Operational alerts that allow operations to detect current issues such as looping processes, exceeding disk capacity, etc., for hundreds of servers. Alerts can be sent to any SNMP based management console, 3270, email or a browser on a workstation.

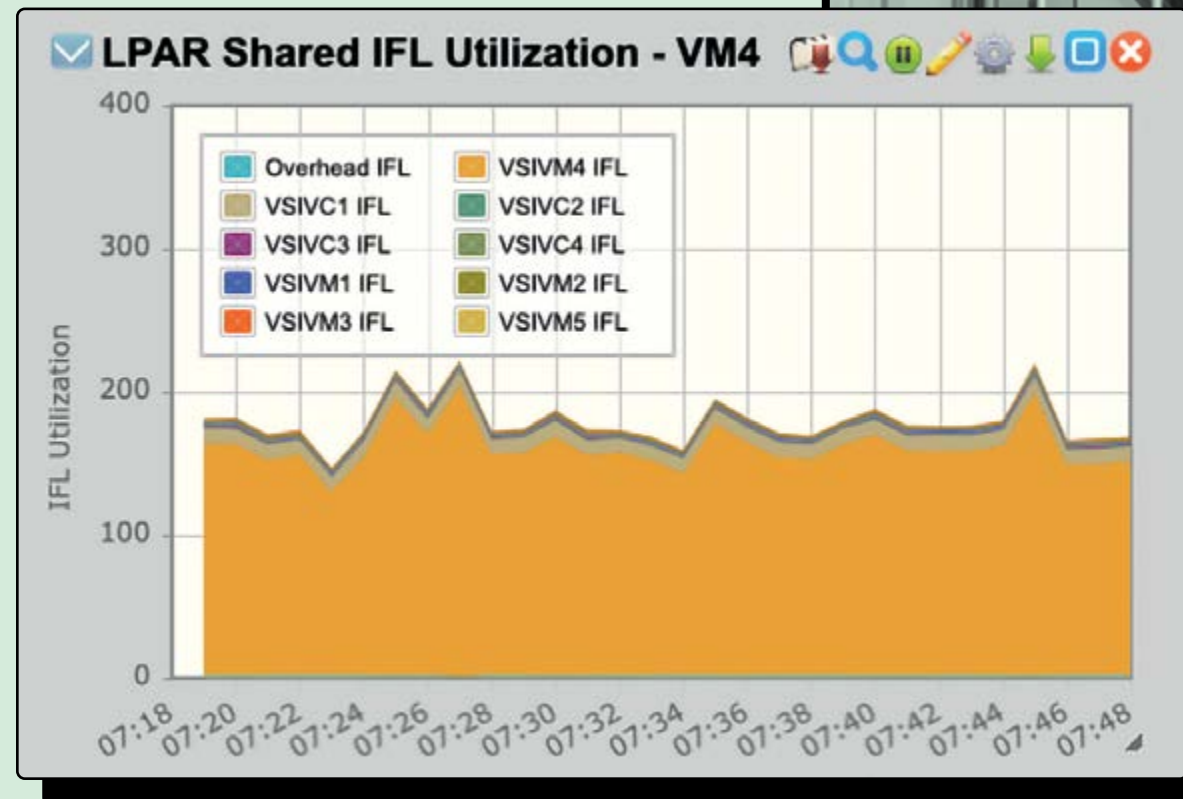


CPU Utilization by user group (class)

z/OS Data collection with zOSMON

Velocity Software has recently added z/OS to our performance management suite. As the industry leader in z/VM performance management for over 30 years, and as the industry leader in Linux on IBM Z performance management for over 20 years, many zVPS installations have requested support of z/OS metrics in our modern and flexible graphical interface.

With the ability to collect data from all the z/OS LPARs in an enterprise, there is now one centralized database for the enterprise. With such a low cost of operation, data can be processed in multiple locations for full redundancy.



CPU Utilization of LPARs with shared IFLs

Velocity Software's Single Pane of Glass

zVPS, the Velocity Software Performance Suite, measures the performance of today's complex IT systems. Today's IT systems include Linux, VMware and Windows servers, mainframes with complex networks and numerous applications. Managing each component is important to your business and it requires a totally integrated performance management solution for your enterprise.

zVPS real-time screens, along with historical reporting and trending reports are accessible via your web browser. Website security is fully supported by the utilization of IBM's z/VM TCP/IP SSL servers.

zVIEW: GRAPHICAL PERFORMANCE DISPLAYS FOR z/VM AND LINUX ON IBM Z

zVIEW is the browser-based extension to view performance data. Installations can view real-time and/or historical performance data in columnar or graphical views and easily move from view to view. zVIEW can be used to view related system performance metrics, assist with capacity planning and trend analysis or be used to perform quick "health checks" of the system. Velocity Software provides several preconfigured screen arrangements to assist with quick analysis of how the system is performing. In the following examples, we demonstrate several examples of how zVIEW is used to view data, including a view of CPU utilization over a 30-minute period along with the correlating I/O for the same time frame. In addition, we can see installation defined user groups including the collection of users contained within a selected group for the current moment in time.

zPRO: On-Prem Cloud Enablement

zPRO: COMPLETE SYSTEMS MANAGEMENT AND ON-PREM CLOUD ENABLEMENT FOR z/VM AND LINUX ON IBM Z

Improve the productivity of anyone on your IT team by enabling them with a simple to use web interface for managing the z/VM platform and multiple servers. zPRO provides a turn-key approach to private cloud implementation. Something that would normally take weeks to implement can now be accomplished in hours or minutes. As installations move towards IBM Z in virtualizing their servers, there is an increasing need for a web based interface suitable for system administrators as well as end-users. Velocity Software is providing zPRO — a web based interface for z/VM systems management. zPRO is an add-on product of zVPS, Velocity's Performance Suite for IBM Z, utilizing the web serving functionality provided for z/VM.

As a "native" z/VM based application, all functions are performed using native z/VM facilities. This architecture provides several advantages including ease of use and the ability to leverage the strengths of z/VM to the fullest. zPRO ships with a built-in Directory Manager called zDIRECT. zPRO also supports the use of DIRMAINT and VM:Secure for Directory Management and RACF and VM:Secure for Security Management.

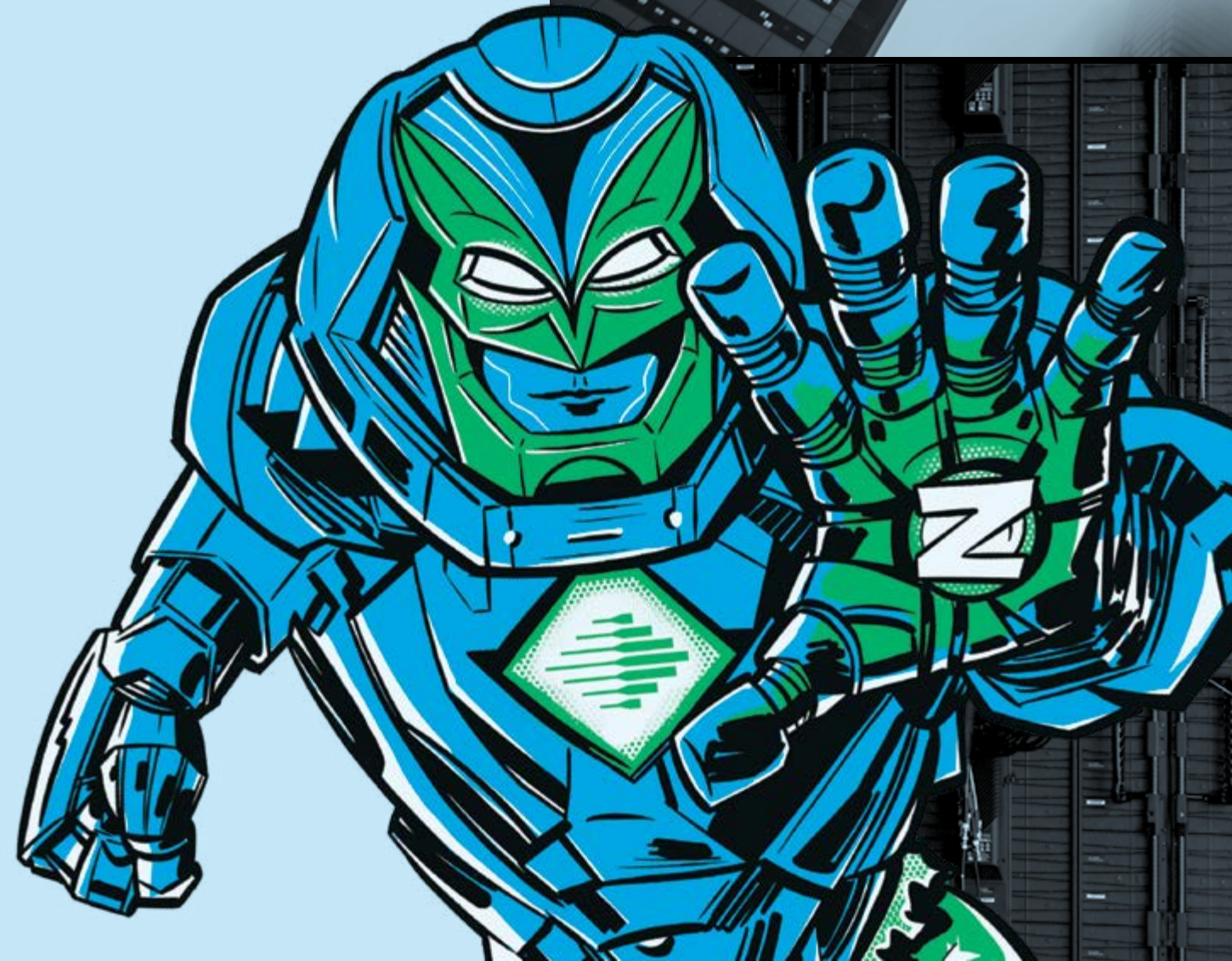
Features currently provided by zPRO Systems management and cloning capability for:

- LPARs
- Linux servers
- z/VSE
- z/OS
- CMS users

Administrators define servers based on "golden images" and delete servers when they are no longer required. Deletion is done manually or automatically if a specific lifetime is designated. Server configuration management: Allow administrators to manage their servers virtual CPUs, storage and disks via a browser interface without the need for z/VM skills.

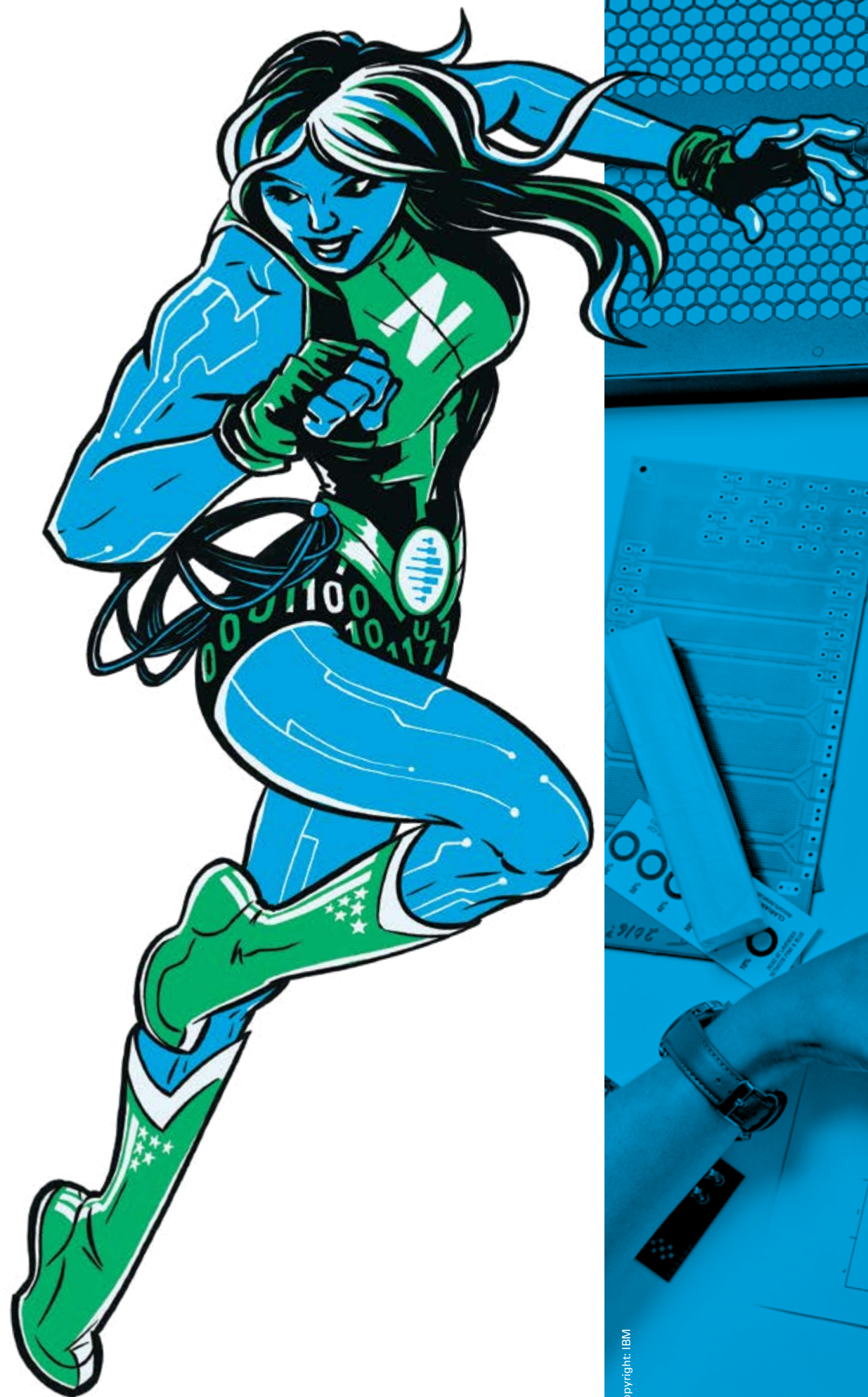
Other zPRO features:

- Automatic resource allocation and reclamation
- Resource consumption limits by individual or group
- Functional decentralization
- Live Guest Relocation (LGR) in an SSI Cluster
- Installation extensibility





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