



PROVIDES EASY MONITORING OF KVM

PLUG AND PLAY IT MONITORING OF
KVM VIRTUALIZATION PLATFORM

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Executive Summary

KVM has gained incredible momentum in the past years and is now rapidly growing with an increasing number of implementations around the world. As more organizations start using KVM virtualization technology, the need to monitor, manage, and control it also increases.

This solution brief details how op5 has developed a powerful Ready for PureFlex virtual appliance for IBM PureFlex System that enables monitoring of KVM environments. IBM PureFlex System is ideal for deployment of hypervisors such as KVM, and for using op5 Monitor as the tool to monitor the resource usage on the KVM virtualization infrastructure.

Overview

op5 provides an adaptive and powerful open source software called op5 Monitor for unified IT monitoring that manage, reports, visualizes, and measures information technology in large enterprise IT environments. op5 Monitor handles IT infrastructure from network hardware, software and services all the way to virtual or cloud based services.

The background

- op5 needed to find a virtualization platform for its internal IT that could deliver the performance and cost effectiveness needed to meet the organization's demands.
- There was no suitable monitoring solution available on the market for monitoring KVM (Kernel-based Virtual Machine).
- op5 is working with IBM and is an ISV partner that has certified op5 Monitor on the IBM PureFlex System.

The solution

- op5 implemented KVM as the strategic virtualization platform of choice for its internal IT because of its outstanding performance and cost effectiveness.
- op5 is now using a KVM-based solution on Red Hat Enterprise Linux (RHEL) v.5.5 and 6.x with KVM for all its internal IT and external IT services.
- op5 developed a KVM plug-in (check_libvirt) for agentless monitoring of KVM

The benefits

- op5 reduced its own software licensing costs by approximately 60% using KVM technology instead of the previously used virtualization solution.
- op5 can now provide its customers the ability to monitor the KVM virtualization platform.
- Fast setup time for monitoring of KVM
- Proactive capacity planning increases reliability and uptime increased by monitoring the resource usage of virtual systems
- Provides unified monitoring of all major virtualization platforms.
- Monitoring of all services and applications running on KVM. Helps enterprises understand actual performance and health of their virtual environment, with all relevant data displayed in a unified view along side other services.
- op5 now offers a powerful Ready for PureFlex virtual appliance for IBM PureFlex Systems that enables monitoring of KVM environments.
- op5 Monitor integrates with IBM Systems Director and IBM Tivoli Storage Manager

Components

Software: op5 Monitor virtual image for IBM PureFlex System using RHEL v.5.5 and 6.x KVM virtualization.

Hardware: Hardware independent

Monitored Components on KVM platform:

- Host-specific parameters:
- Storage pool list
- Storage pool volume usage

VM running VM- specific parameters:

- CPU Usage
- Memory Usage
- Disk I/O
- Network I/O

Introduction

An increased use of different virtualization platforms creates new opportunities for IT operations, but also introduces new challenges. Usage of virtualization platforms requires control since potential problems can have serious consequences and have direct impact on business processes. Today's organizations use a variety of different hypervisors including products such as VMware ESXi, Microsoft-Hyper V, Xen, and KVM. KVM has gained incredible momentum in the past years and is now rapidly growing with an increasing number of implementations.

As more organizations start using KVM virtualization technology, the need to monitor, manage, and control it also increases.

op5 was one of the early adopters of KVM virtualization technology. op5 provides an adaptive powerful open source software for unified IT monitoring that manages, reports, visualizes, and measures information technology in large enterprise IT environments. op5 handles all type IT infrastructure from network hardware, software and services all the way to virtual and cloud based services.

"We are an open-source company and we saw early the clear benefits of replacing our virtual infrastructure with KVM technology". - says Christian Nilsson, Manager Professional System at op5. "We support emerging open standard technologies, and of course we wanted to monitor our own KVM-based virtual environment. At that time we noticed an empty space in the market, and we engaged to develop and support best of breed IT monitoring of open virtualization technologies and help share experience and know-how for the KVM technology."

Combined with the increasing number of KVM implementations around the world and the increased need in the market for being able to monitor KVM, op5 developed a plug-in for monitoring KVM-based virtualization solutions with op5 Monitor or Nagios. Today, op5 uses this plug-in internally to monitor and control its KVM virtualization infrastructure. The solution is based on KVM, using a plug-in for agentless monitoring of resource usage on the KVM virtualization infrastructure. The Plug-in enables monitoring of for example CPU, I/O, and Memory usage on KVM.

"To address the empty space on the market for monitoring of KVM, we combined our years of experience in the global IT monitoring arena with our deep industry knowledge to create a solution that allow easy and efficient monitoring of KVM" - Says Jan Josephson, CEO of op5 AB.

"Because of the decreased TCO from KVM based solutions, KVM has made it possible for me to maintain a virtualization environment comparable to any competitor, but at half the price." - Says Aron Lander, System Administrator/Operations Engineer at op5

Proactive capacity planning

Development of the KVM plug-in to monitor KVM virtualization infrastructure allows organizations to do better capacity planning, which enables the provisioning of usage of resources such as storage, CPU, and memory more proactively. These three components enable a dynamic way to proactively plan an organization's upgrades in an effective manner. Knowing what, where, and when are crucial parts of capacity planning for organizations, making it possible to add resources to a virtual environment in a timely fashion.

Select Multiple Items

Virtual hosts and relative hosts(Virtualization)

HOST	SERVICES	ACTIONS
eq01-a.op5	WriteOPS per second , Temperature , Telnet , SSH Server , ReadOPS per second , RAID Status , PSU , PING , Overall health , IF 4: eth2 Traffic , IF 4: eth2 Status , IF 4: eth2 Errors , IF 3: eth1 Traffic , IF 3: eth1 Status , IF 3: eth1 Errors , IF 2: eth0 Traffic , IF 2: eth0 Status , IF 2: eth0 Errors , HTTPS Server , HTTP Server , FTP , Fan status , Disk usage , Disk status	   
esxi-dev-gbg	VMware VMFS datastore1 - internal disk , VMware NET usage , VMware MEM usage , VMware MEM swap , VMware CPU usage , PING	   
esxi-dev-storage	Zombie processes , Total processes , syslog_mysqibackup , System Load , Syslog process , SSH Server , PING , Kernel log process , IF 2: eth0 Traffic , IF 2: eth0 Status , IF 2: eth0 Errors , Disk usage /data0 , Disk usage /boot , Disk usage / , Current users , Cron process Disk usage /backup	   
esxi-supp-gbg	PING , HTTPS Server , HTTP Server	   
kvm-ctr01	Zombie processes , Total processes , System Load , Syslog process , SSH Server , PING , IF 3: eth1 Traffic , IF 3: eth1 Status , IF 3: eth1 Errors , IF 2: eth0 Traffic , IF 2: eth0 Status , IF 2: eth0 Errors , Disk usage / , Current users , Cron process	   
kvm01-01	Zombie processes , Total processes , System Load , Syslog process , SSH Server , PING , NTP , KSM , IF 3: eth1 Traffic , IF 3: eth1 Status , IF 3: eth1 Errors , IF 2: eth0 Traffic , IF 2: eth0 Status , IF 2: eth0 Errors , Disk usage / , Current users , Cron process , CPU I/O RAM Usage	   

Picture: Virtualization unfied grid

All data collected by op5 Monitor is displayed in a unified view, were reported with data from KVM and other hypervisors in use presented in an easy to understand way. This enables IT departments too better understand how their virtual environment actually performs along side other services and applications running on the hypervisors.

op5 Monitor lets you monitor your virtual environment, like you would your physical servers, and visualize the reported data in easy to understand reports that can be shared. Fast event correlation, root cause analysis, problem identification for applications and services running on virtual or partially virtually run infrastructure is possible due to the open standards on both the KVM platform and op5 Monitor.

KVM provides an open platform - for third party solutions

Both IBM and op5 AB are members of the Open Virtualization Alliance, an alliance that support the adoption of open virtualization technologies especially KVM. Open Virtualization Alliance (OVA) supports the ecosystem of third party solutions around KVM and other open source communities that manage development of KVM.

“As Enterprises continues to distribute data-production both internally and externally, there is an increasing existence of hybrid environments i.e. services being deployed on a mix of ESX, KVM and XEN. Having a single monitoring system, indifferent to the choice of underlying virtualization technology will be necessary for easy to deploy and easy to use monitoring. We are very happy to be participating in the Open Virtualization Alliance as it is very much aligned with our strong commitment to offer an open and extensible platform to our customers.” -Says Klas Bernehjält, Head of Marketing op5 AB.

KVM and op5 on the IBM PureFlex System

op5 works with IBM as a licensed independent software vendor (ISV) for IBM PureFlex System and is a Business Partner in the “Ready for IBM PureSystems™”. op5 has developed a virtual appliance for IBM PureFlex System with a KVM plug-in (check_libvirt) to monitor KVM. IBM PureFlex System supports multiple hypervisors such as VMwares.-ESXi, Microsoft Hyper-V and for the open-source customer KVM. IBM PureFlex System is ideal for deployment of hypervisors such as KVM, and for using op5 Monitor as the tool to monitor the resource usage on the KVM virtualization infrastructure.



ABOUT OP5

op5 is a market leading developer of Enterprise IT Monitoring and Management solutions. op5 develops and delivers enterprise-class software for monitoring and administration of the whole IT, from hardware, software and the services being produced.

Our business concept is to offer the market the most cost-effective monitoring solution for IT support organizations. We utilize the power of affectivity of Open Source as the prime component in our product development.

For more information please visit www.op5.com or contact our local Professional Partners.

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To find more information about, IBM or OVA please visit.

www.openvirtualizationalliance.org

www.ibm/systems/kvm