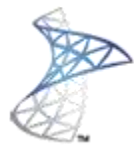




Veeam Overview



Microsoft*

System Center User Group



David van Unen, Corporate accountmanager Netherlands

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HP Software
Gold Business Partner



- Summer...



Veeam product strategy



Veeam ONE



Veeam Monitor

Veeam Monitor for VMware

Back Forward Refresh Add vCenter Add Host Report Modelling Options Help Full Screen Search...

Business View

- Application
 - Active Directory
 - Exchange
 - Oracle
 - SQL
 - System Center Operations Manager
 - Uncategorized
- Department
 - Finance
 - Human Resources
 - Information Technology
 - Marketing
 - Sales
 - Uncategorized
- Operating System
 - Linux
 - Uncategorized
 - Windows 2003
 - Windows 2008
 - Windows 7
 - Windows XP
- Region
- Service Level Agreement
- Custom Views

Infrastructure View

Business View

Alarm Management

Database: megastore\Veeam\VeeamMonitor Service: megastore (connected)

Exchange

Summary Overall CPU Memory Network Disk Swap Datastore Virtual disks Top VMs Events

CPU Usage Top line: 1.2 GHz

Memory Consumed Top line: 8.0 GB

Network Usage Top line: 200.0 MBps

Disk Usage Top line: 5.0 MBps

Swap Usage Top line: 100.0 MB

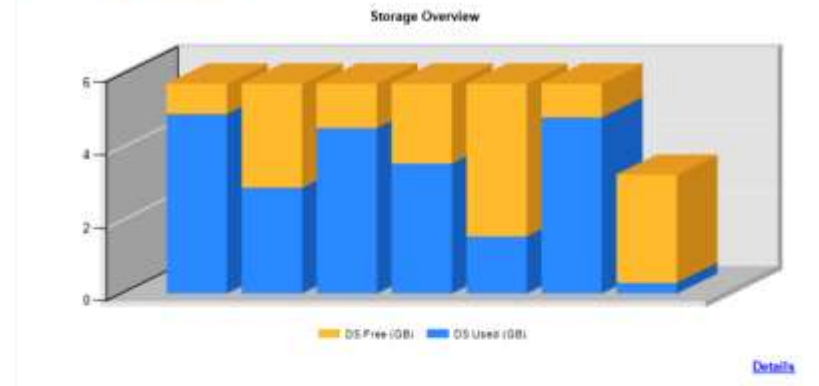
Key	Object
■	Exchange001
■	Exchange002
■	Exchange003
■	Exchange004

Chart options...

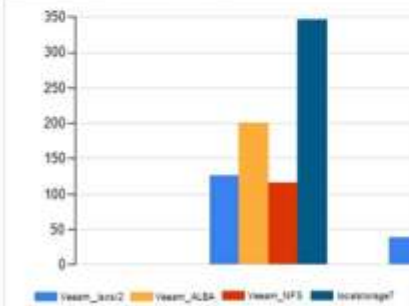
Veeam Reporter

- Storage capacity
- Infrastructure
- Infrastructure changes
- Host performance
- VM performance
- Offline Reports

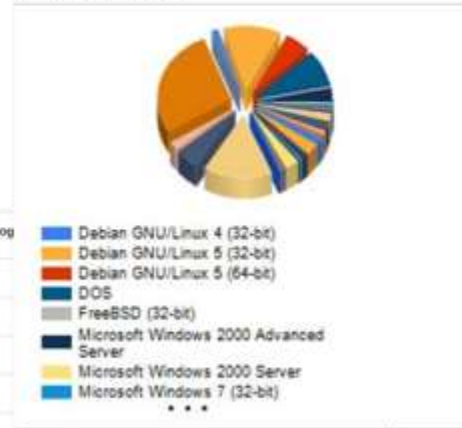
Storage Capacity



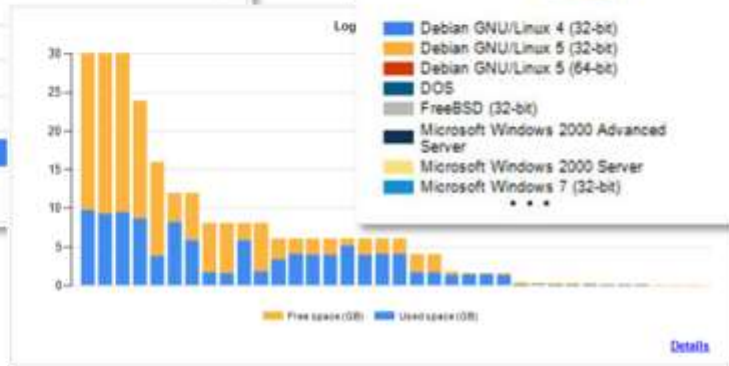
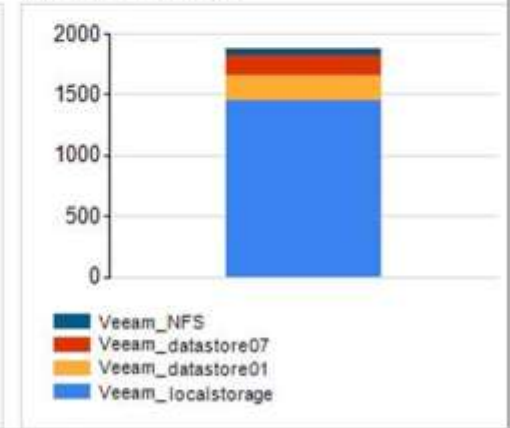
Thin-Provisioned vs. Thick Disks



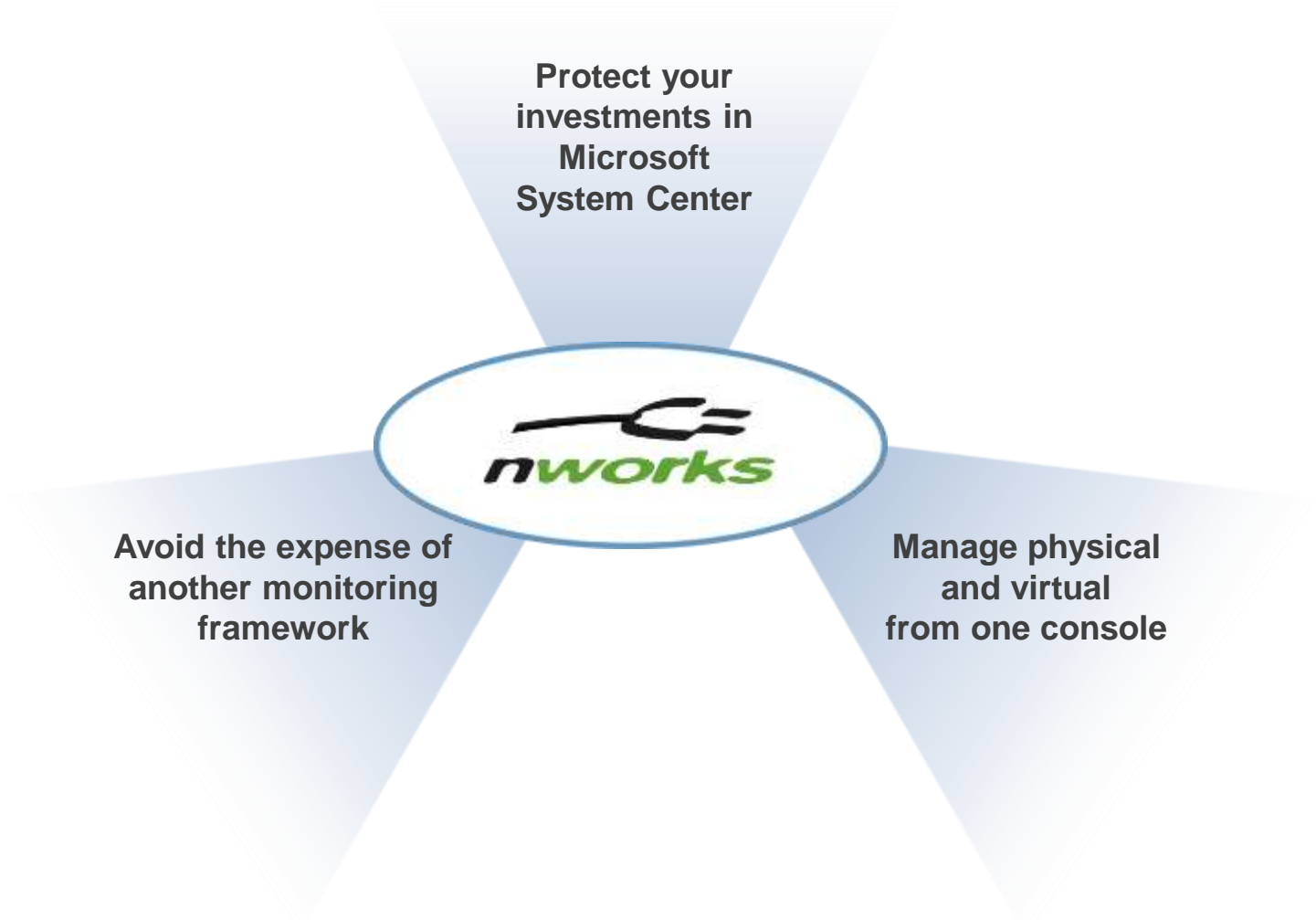
VM Guest OS



Free Space Total



Veeam nworks Management Pack



Accommodation of any environment

Enterprise-class architecture:

- Agentless
- Distributed
- Scalable
- Cost-effective

Proven Architecture

- Version 5.6
- Here from the beginning



Scalable?



Dashboard

Enterprise Manager

Connected Servers

Enterprise Manager

Total collectors:	60
Active collectors:	60
Inactive/StandBy collectors:	0
Unreachable collectors:	0
Failover Groups:	3



[Details](#)

Connected Servers

Total vCenter:	14
Total ESX:	1358
Monitored ESX:	1358
Unmonitored ESX:	0



[Details](#)

License

Title:	nworks Full License
Total sockets:	5500
Used sockets:	5379
Remaining sockets:	121



[Details](#)

Complete integration



Enable all Operations Manager functionality...

- Alert on performance and events
- View service maps and dashboards
- Get detailed reporting and auditing
- Integrate notifications, responses and automation



... for all VMware components

- vCenter Server
- ESX(i) hosts
- Clusters
- Virtual machines
- Storage
- Hardware

Distributed architecture

Microsoft System Center

Operations Manager 2012
Operations Manager 2007
MOM 2005



Veeam nworks Management Pack

nworks Collector

Ops Manager Agent



Agentless
Scalable
Centrally managed
Fault-tolerant

VMware

vSphere 5,4.x and VI3



Collector Loadbalancing and Failover

Microsoft System Center

Operations Manager 2012
Operations Manager 2007
MOM 2005

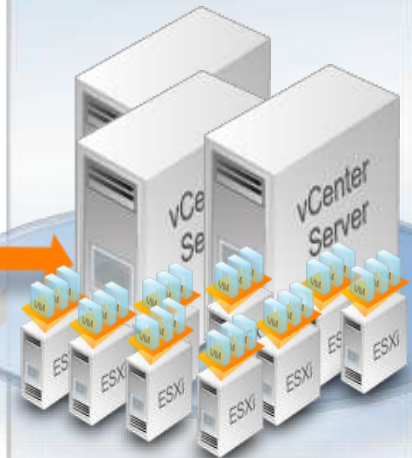


Veeam nworks Management Pack

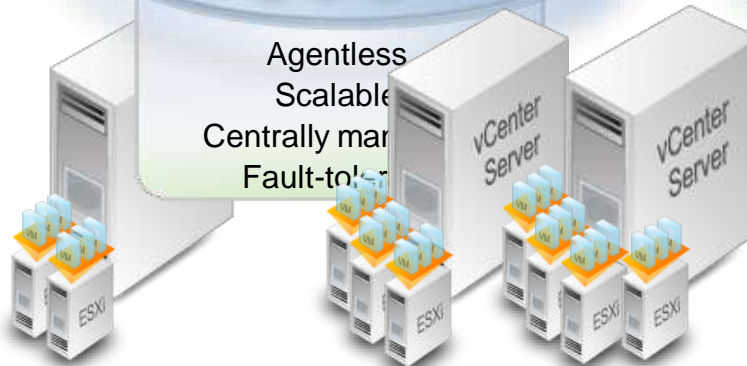


VMware

vSphere 5, 4.x and VI3



Agentless
Scalable
Centrally managed
Fault-tolerant



Online Deployment Calculator

Deployment Planning Calculator for nworks 5.6

VMs	<input type="text" value="1000"/>
Hosts	<input type="text" value="50"/>
Datstores	<input type="text" value="100"/>
Clusters	<input type="text" value="12"/>
Resource Pools	<input type="text" value="6"/>

Recommended Collectors:

Note1: The result does not include Collectors required for full high-availability.

Note2: The result is calculated using default collection settings – the number of Collectors required can be reduced, e.g. by increasing collection interval/ multipliers. For full details see the Deployment Guide.

Customise configuration

VM factors	Host factors
Average number of	Average number of
Datstores used per VM <input type="text" value="1"/>	Storage vmhba links per Host <input type="text" value="54"/>
Virtual NICs per VM <input type="text" value="1"/>	CPU cores per Host <input type="text" value="8"/>
Partitioned disks per VM <input type="text" value="2"/>	Physical NICs per Host <input type="text" value="8"/>
	Hardware Sensors per Host <input type="text" value="20"/>

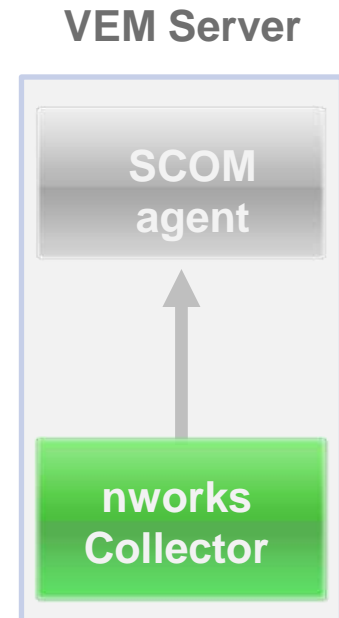
http://www.veeam.com/support/nworks_scalability.html

Virtual Enterprise Monitor

Virtual Enterprise Monitor (VEM)=

nworks Collector
+
OpsMgr agent

- A VM or a physical computer
- Dedicated Windows 2003 or 2008 server
- x86 or x64 architecture



Monitoring Data Flow

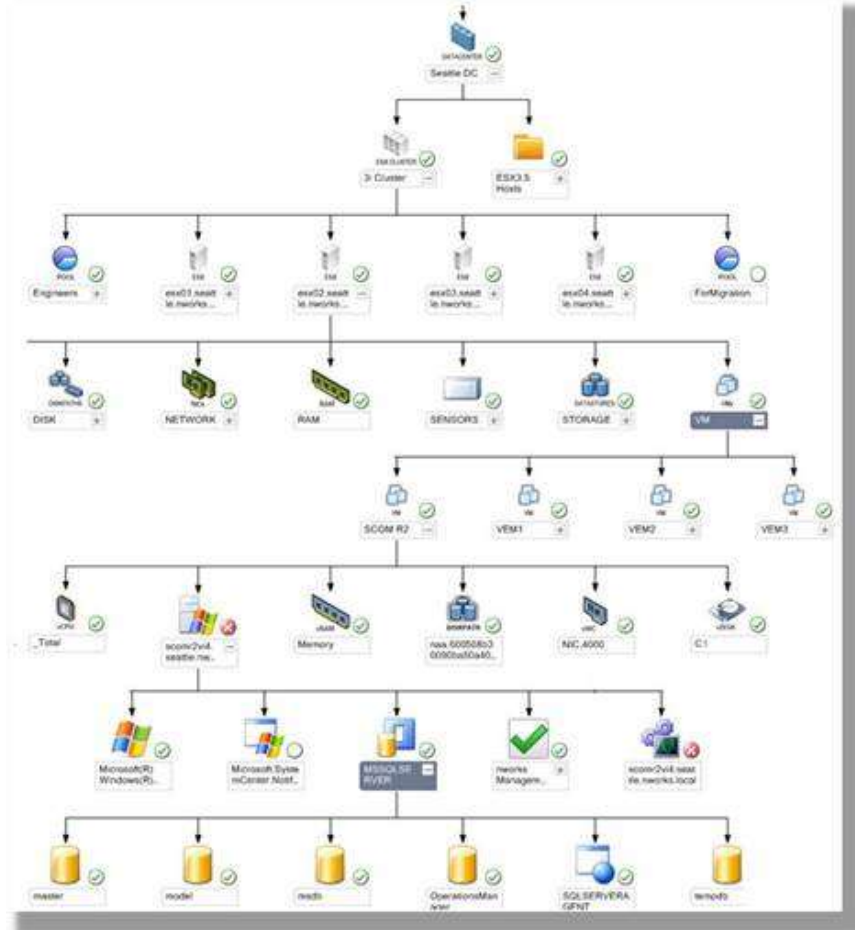
Connect the dots!

End-to-end visibility from:

- Hardware to hypervisor
- Hypervisor to VM
- VM to applications and services

Enable root-cause analysis

Ensure correct escalation



Knowledge base

VMware

“expert in a box”

Elevates front-line monitoring staff, without additional training

Ensures correct escalation path and reduces time to resolution

Knowledge [State Change Events \(5\)](#)

Summary

This Datastore has breached threshold for free disk space in percentage. View the [Datastore Usage Dashboard](#) for historical information.

Causes

ESX hosts store all files necessary for virtual machine operation in a VMware Virtual Machine File System (VMFS). Proper capacity management is critical because this file system is required for any operations related to a virtual machine.

All VMFS (vmfs2, vmfs3) must retain a level of free space to ensure that the virtual machine functions properly. Two important capacity thresholds must be observed:

- **200 Megabyte remaining:** VMware suggests 200 MB as the threshold where ESX system administrators take action to resolve capacity issues. VMFS volumes vary widely in size and it is impossible to define a precise percentage, but the risk of unexpected problems become greater at this point.
- **100 Megabyte Remaining:** If left unchecked, a VMFS volume grows until only 100 MB of space remains, at which time issues may occur. 100 MB is defined as a critical threshold at which ESX system administrators must take immediate action to correct the issue because VMware VMFS stops growing at this point.

The default thresholds in `nrworks` for this monitor are 95% = Warning, and 98%=Critical. Depending on the size of the Datastore, these percentages may be more or less than the above precise values in MB. Note that Datastore usage is also monitored as free KB with the `diskFree` metric, so you can set thresholds as both percentage and fixed KB value.

Note that Datastore usage is also monitored as a percentage, with the `diskPerCused` metric.

Potential Issues

The following is a list of some potential issues that may affect virtual machines residing on a VMFS that is full:

- **Virtual machine startup failure:** ESX hosts are able to provide more RAM space than is available in the total physical RAM installed in the server. This is called Over Commitment. ESX hosts create `.vswp` files for any virtual machine that has allocated memory greater than the physical RAM that is available to the virtual machine. The `<VMName>.vswp` file is created when the virtual machine is started. Without sufficient space, this file cannot be created, and the virtual machine is unable to start. For more information, see [ESX Virtual Machine Won't Start \(Insufficient Memory\) \(1330\)](#).
- **VMotion failures:** ESX hosts that are in a cluster of ESX hosts that have VMware HA/DRS enabled may encounter failures when VMotion attempts to move a virtual machine from one host to another. It is possible for this failure to occur during off hours when it may not be immediately identified as a failure because VMware DRS can be configured to VMotion virtual machines without interaction from an administrator.
- **Snapshot creation/commit:** When a snapshot is taken or committed to the virtual machine, data is written to the VMFS. If the VMFS is unable to accommodate the additional data, the snapshot does not grow, does not get written, or is not committed. As a result, the virtual machine may fail.
- **Poor performance:** File copy, ls commands, and a variety of Linux level functions perform poorly when the space is full because the VMware VMFS is a filesystem. Though less likely to affect virtual machine availability, these issues impact ESX system administrators and must be resolved. **Note:** Journaling filesystems (like VMFS) are generally capable of maintaining proper performance when at nearly full capacity. However, the probability of performance problems is greatly increased when the filesystem becomes 100% full.
- **Unpredictability:** It is difficult to predict precisely how a full filesystem may create issues because VMFS is a core element of the ESX host. To ensure more efficient troubleshooting and system operation, keep VMFS below the thresholds defined above.

Centralized management

- Administration of multiple collectors
- Pre-deployment planning & ongoing analysis

The screenshot displays the nworks Enterprise Manager interface. The main window shows the 'Enterprise Manager' section with a summary of collector status: Total collectors: 2, Active collectors: 2, Inactive/StandBy collectors: 0, Unreachable collectors: 0, and Failover Groups: 1. A green checkmark icon and a 'Details' link are visible. Below this, the 'License' section shows: Title: SCOM Test license - Evalu..., Total sockets: 250, Used sockets: 6, and Remaining sockets: 244. A 'Logout' link is in the top right corner.

A 'Summary' dialog box is overlaid on the right side of the screen. It contains a table with the following data:

Failover Group	Available collectors	Recommended collectors
Seattle	2	1 ✓
London	1	1 ✓
UK	0	0 ✓
Paris	0	0 ✓

Below the table, there is a blue information icon and the following text: 'For HA monitoring it is recommended to have one additional standby collector for each failover group. For deeper analysis of scalability recommendations use the [nworks online calculator](#).' Below this is the 'Licensing' section, which states: 'Used licenses for these jobs: 3. Remaining licenses: 242.' At the bottom of the dialog box are three buttons: 'Previous', 'Finish', and 'Cancel'.

Horizontal “no-limits” scalability

- Configurable data collection & delivery

The screenshot displays the nworks Enterprise Manager web interface. The left sidebar shows a tree view of connected servers, with a red box highlighting the '24.20' server. The main content area is titled 'Enterprise Manager' and shows system information: Enterprise Manager version: 5.5.2.533 and Site version: 5.5.2.533. Below this, there are buttons for 'Create Failover Group', 'Load balance', and 'Rebuild Full Topology'. The 'Global Collection Settings' section is highlighted with a red circle and contains the following configuration:

Global Collection Settings

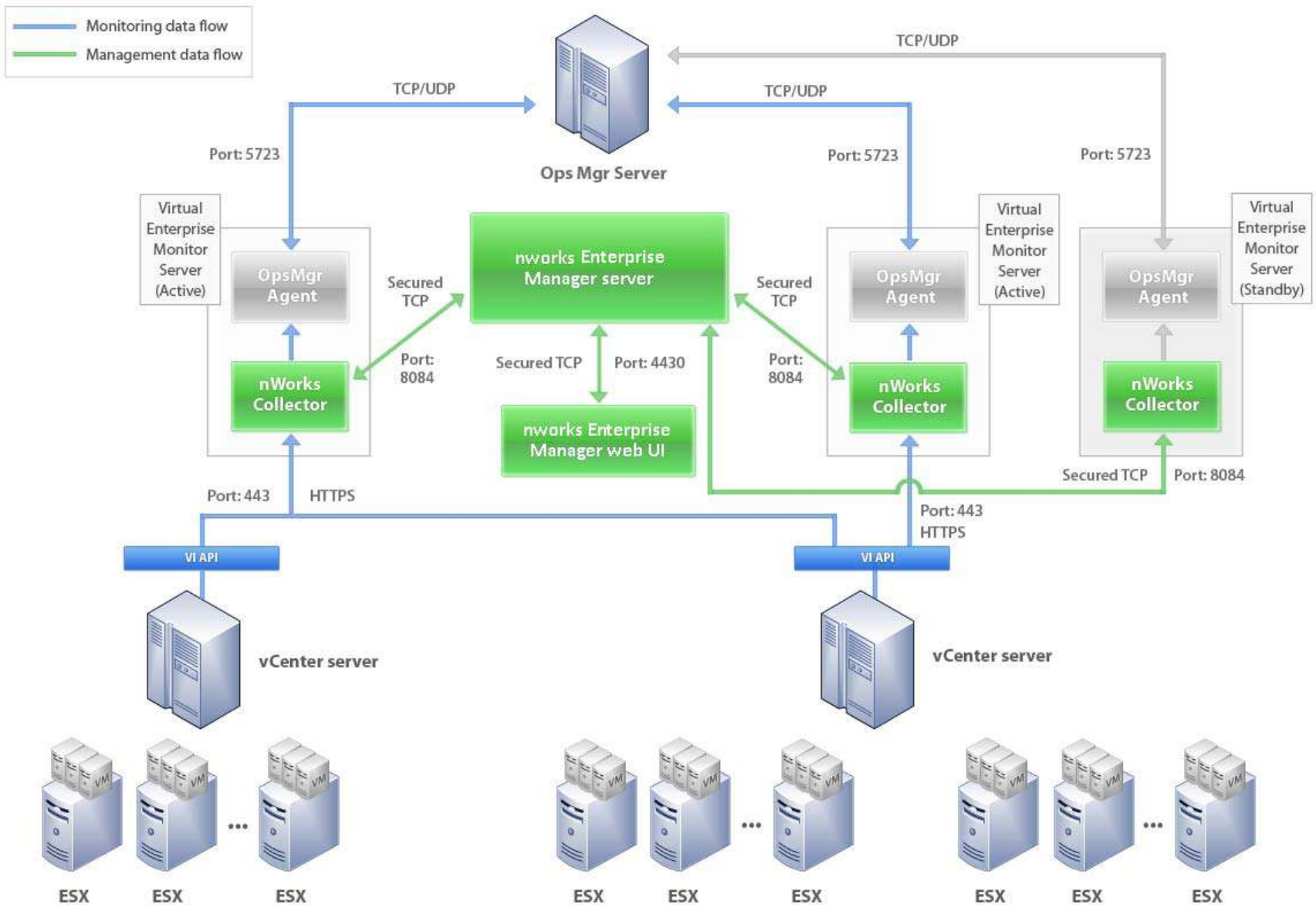
Collection Interval: 5 minutes

Advanced Settings

Use defaults

VMware objects	Interval Multipliers
<input checked="" type="checkbox"/> Cluster	1
<input checked="" type="checkbox"/> Resource Pool	1
<input checked="" type="checkbox"/> Datastore	2
<input checked="" type="checkbox"/> Host Core Metrics	1
<input checked="" type="checkbox"/> CPU details	5
<input checked="" type="checkbox"/> Disk details	3
<input checked="" type="checkbox"/> Net details	4
<input checked="" type="checkbox"/> Hardware details	2

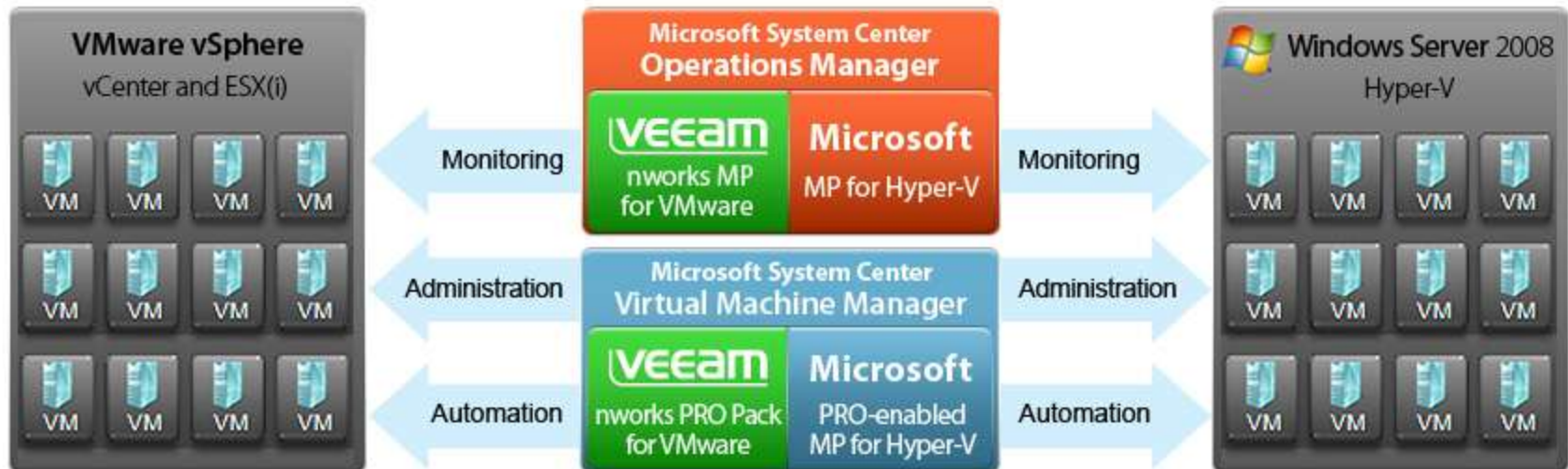
Communication structure



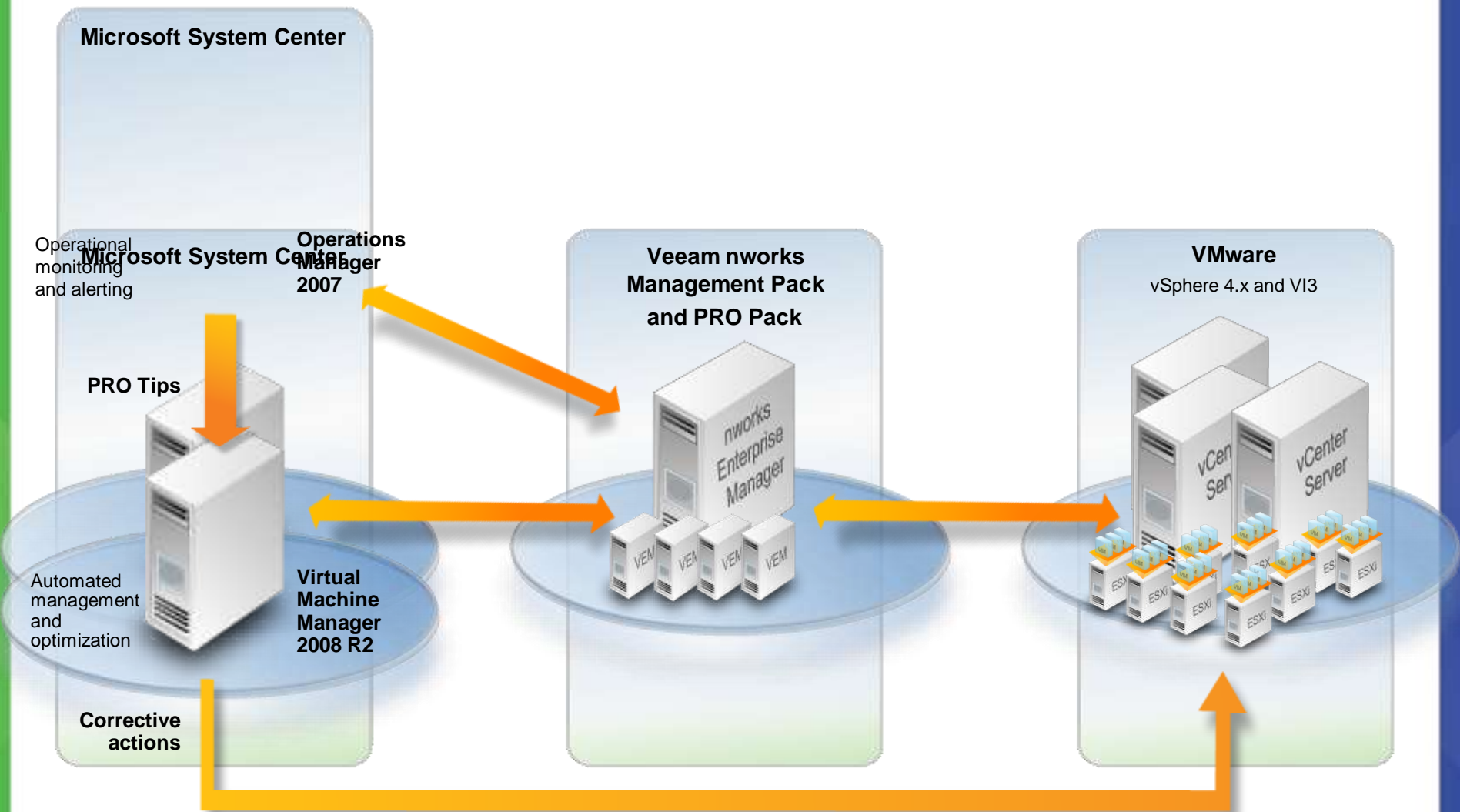
Integration with System Center

Networks MP and PRO Pack for VMware automates :

- Recovery actions
- Resource balancing
- Administration
- Optimization



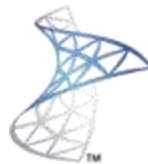
Veeam nworks PRO Pack



nworksDemo showcase binaries

- The purpose of nworksDEMO is only to showcase nworks' ability to deliver and monitor
- performance metrics and events for VMware into Ops Mgr, and to demonstrate features such as VMware Topology, Knowledge Base, Performance and Alert dashboards etc.
- There is NO need to have a VMware environment...

Binaries are available on request; maikel.kelder@veeam.com



Microsoft®

System Center

Operations Manager 2007 R2

VEEAM

Microsoft
GOLD CERTIFIED
Partner

vmware
PARTNER
TECHNOLOGY
ALLIANCE

Veeam Backup and Replication v6

100% Reliability



SureBackup™

Best RTOs



InstantRestore™

Best RPOs



SmartCDP™

vPower™

Virtualization-Powered Data Protection™

5 Patents Pending!

VMware vSphere

VEEAM

vmware
PARTNER
TECHNOLOGY
ALLIANCE

Building on the success of v5

- Continued innovation with **vPower**
 - Run a VM directly from a compressed and deduplicated backup file
 - Automatically create and maintain isolated virtual labs
- New patent-pending capabilities reinvent data protection
 1. **Instant VM Recovery**: recover an entire VM in less than 2 minutes
 2. **U-AIR**: recover individual emails, database records, etc. from a regular image-level backup—without agents, special indexes or extra backups
 3. **Sure Backup**: verify the recoverability of every backup
 4. **On-Demand Sandbox**: create VMs on the fly for testing or troubleshooting
 5. Instant File-Level Recovery for **any** guest OS and file system

What's coming in v6

Enterprise scalability

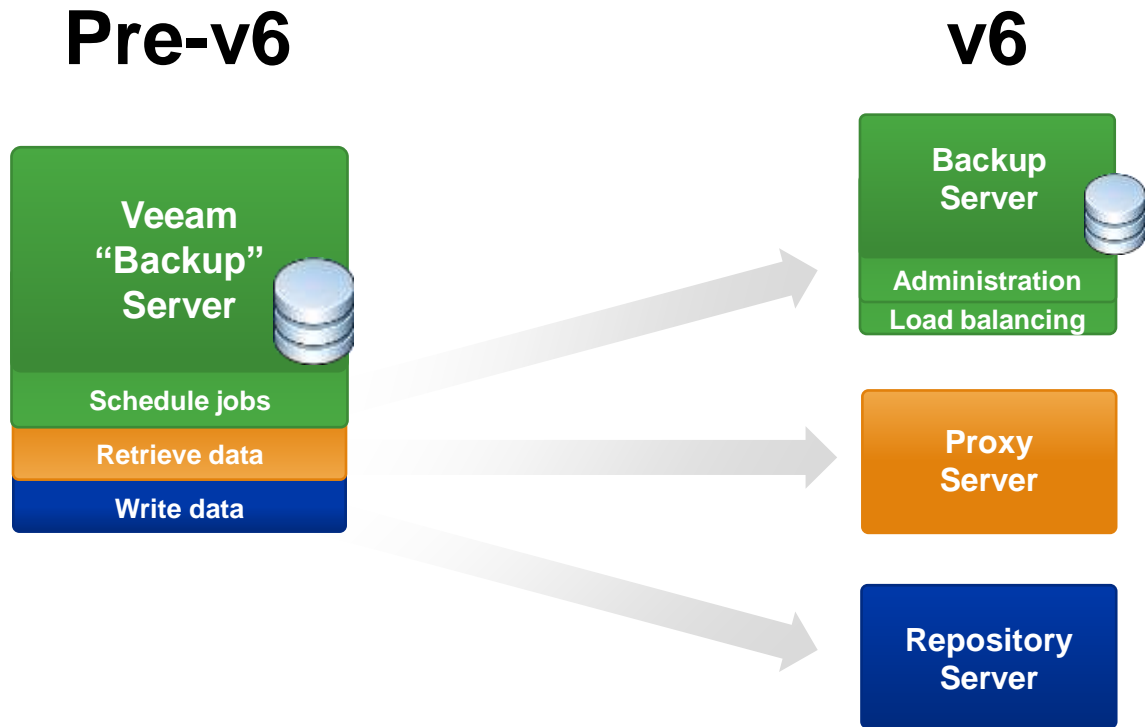
Advanced replication

Multi-hypervisor support

Numerous enhancements, including

1-Click File Restore

Division of labor

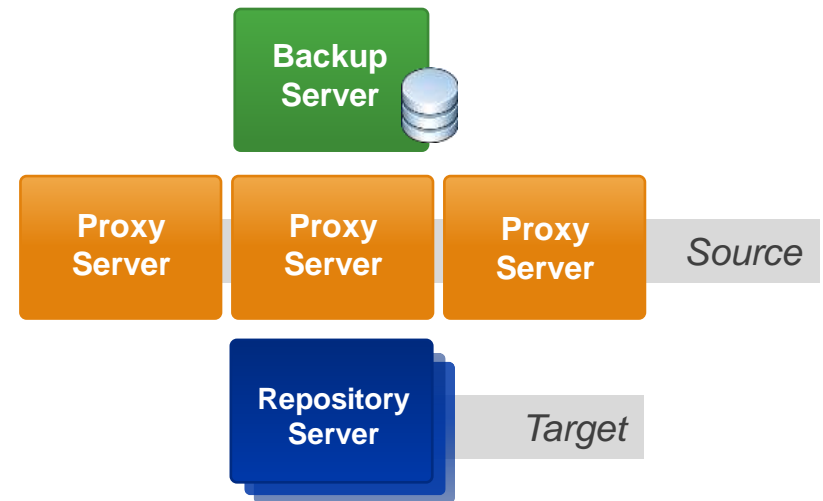


Example: scale-out

Pre-v6



v6



The Next Big Thing!

#1 VMware Backup IS COMING TO Hyper-V

VEEAM

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Partner

vmware
PARTNER
TECHNOLOGY
ALLIANCE

Thank you

VEEAM

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ALLIANCE