

Virtualization Overview

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Agenda

- Metodologie di virtualizzazione
 - Desktop Virtualization
 - Application Virtualization
 - Server Virtualization
- Architettura di Hyper-V
- Novità per sistemisti e sviluppatori

Virtualizzazione

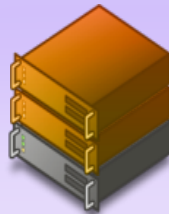


*Remote Desktop
Services*

 **Windows Server[®] 2008 R2**
Remote Desktop Services



Microsoft[®]
System Center



*Server
Virtualization*

 **Windows Server[®] 2008 R2**
Hyper-V[™]

*Application
Virtualization*



Microsoft[®]
**Application
Virtualization**



*Desktop
Virtualization*

Microsoft[®]
Virtual PC Microsoft[®]
**Enterprise Desktop
Virtualization**



*User State
Virtualization*

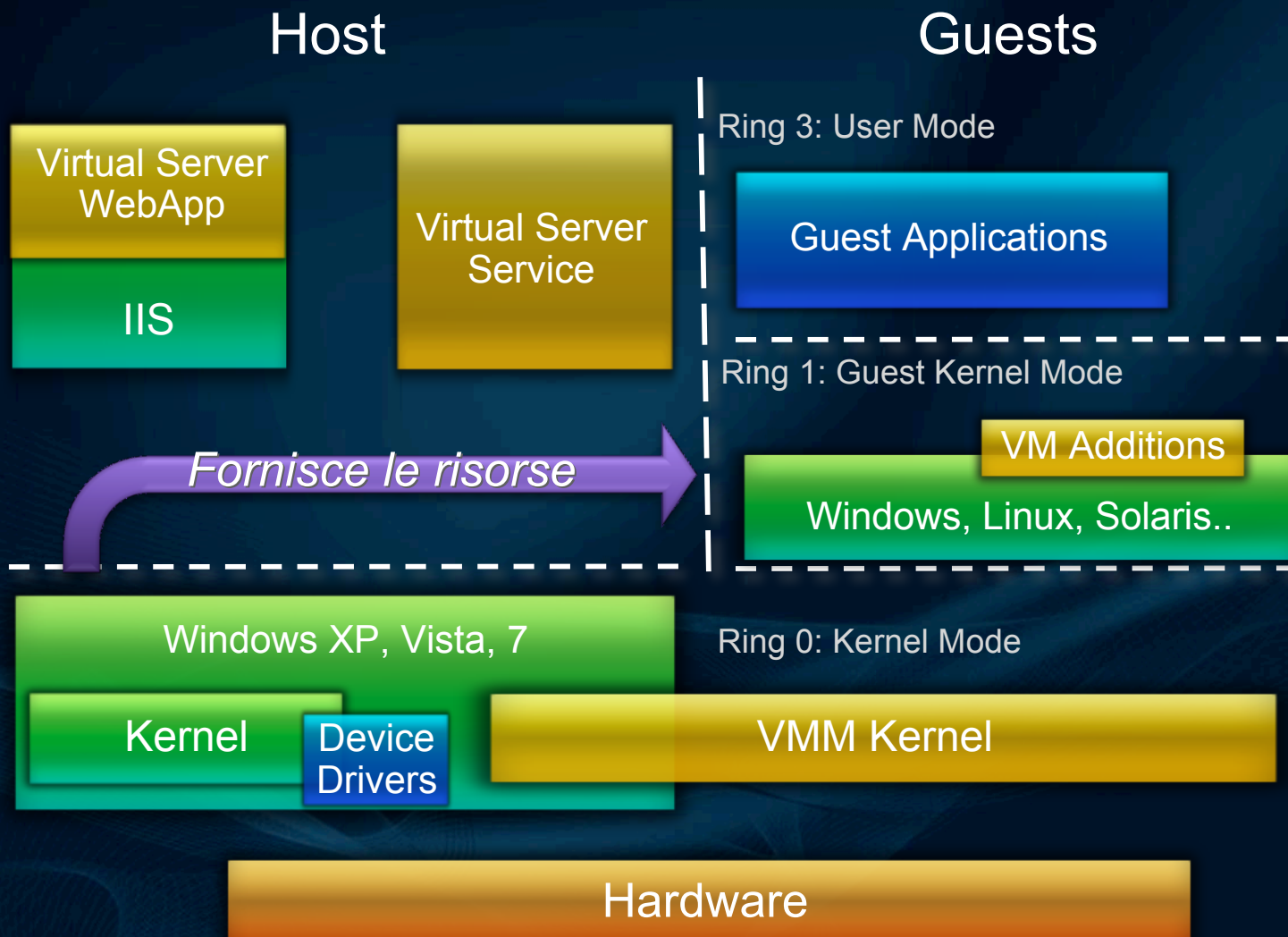
Document Redirection and
Offline Files

 **Windows[®] 7**

Desktop Virtualization

- Assegnazione di risorse hardware
 - Riserva memoria non paginabile
- Emulazione delle periferiche
 - Scheda video
 - Scheda di rete
 - Scheda audio
 - ...

Virtual PC / Virtual Server



Demo

- Virtual PC

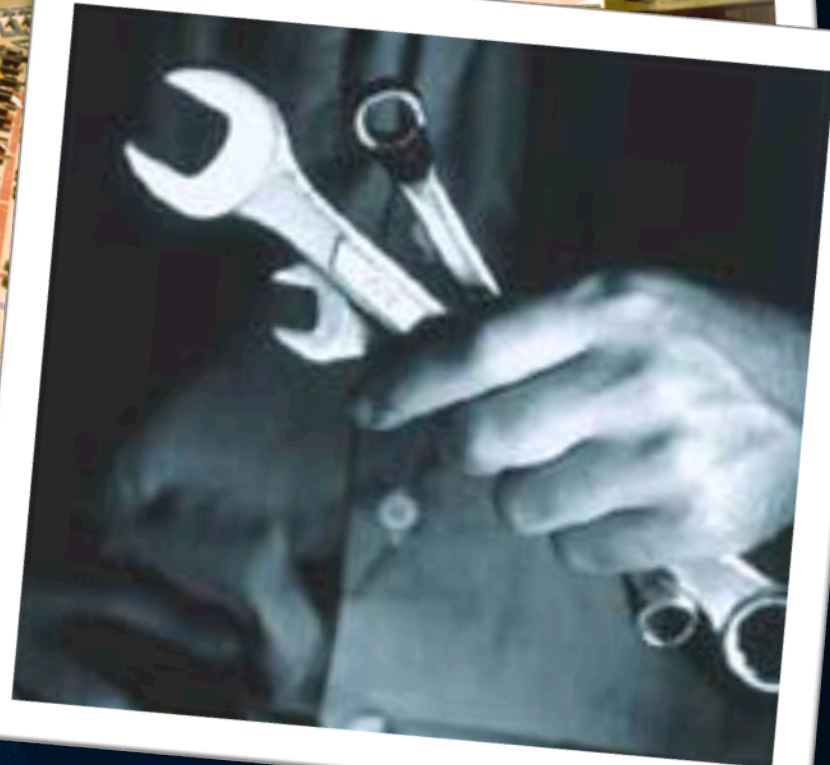


Limiti Desktop Virtualization

- L'esecuzione di applicazioni a Ring > 0 ha un impatto molto negativo sulle prestazioni
- I dispositivi emulati sono onerosi dal punto di vista computazionale

Server Virtualization

Server Virtualization

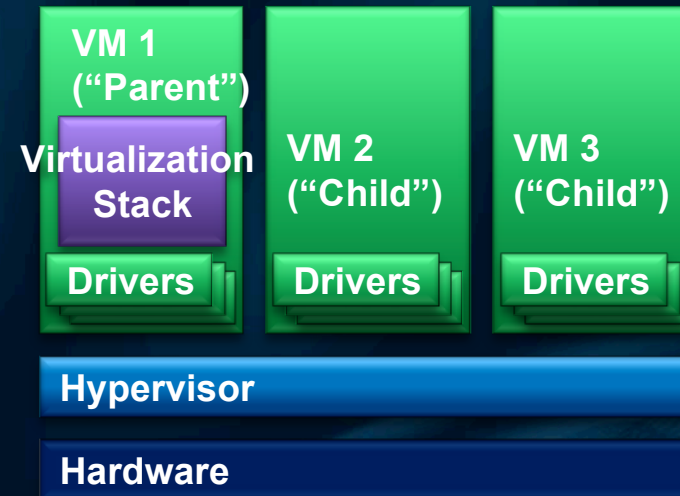


Tipologie di Hypervisor

- Monolitico



- "Microkernel"



- Più semplice
- Meno oneroso
- Utilizza driver esistenti

Parent Partition / Management OS

VMI Provider

Virtual Machine
Management Service

VM
Worker
Processes

Windows
Kernel

Device
Drivers

Virtualization
Service Provider
(VSP)

VMBus

Child Partition / Virtual Machine

Applications

Virtualization
Service
Consumer(VSC)

Windows
Kernel

VMBus

Hypervisor

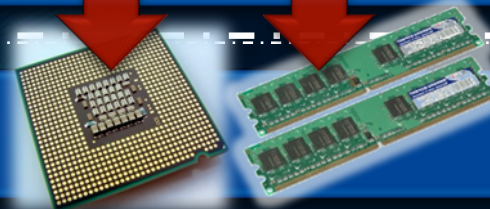
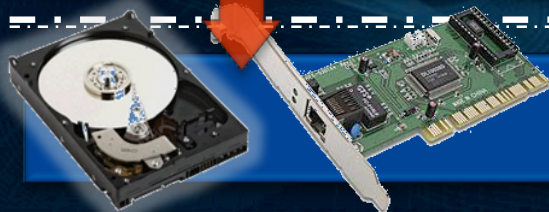
Hardware

User Mode

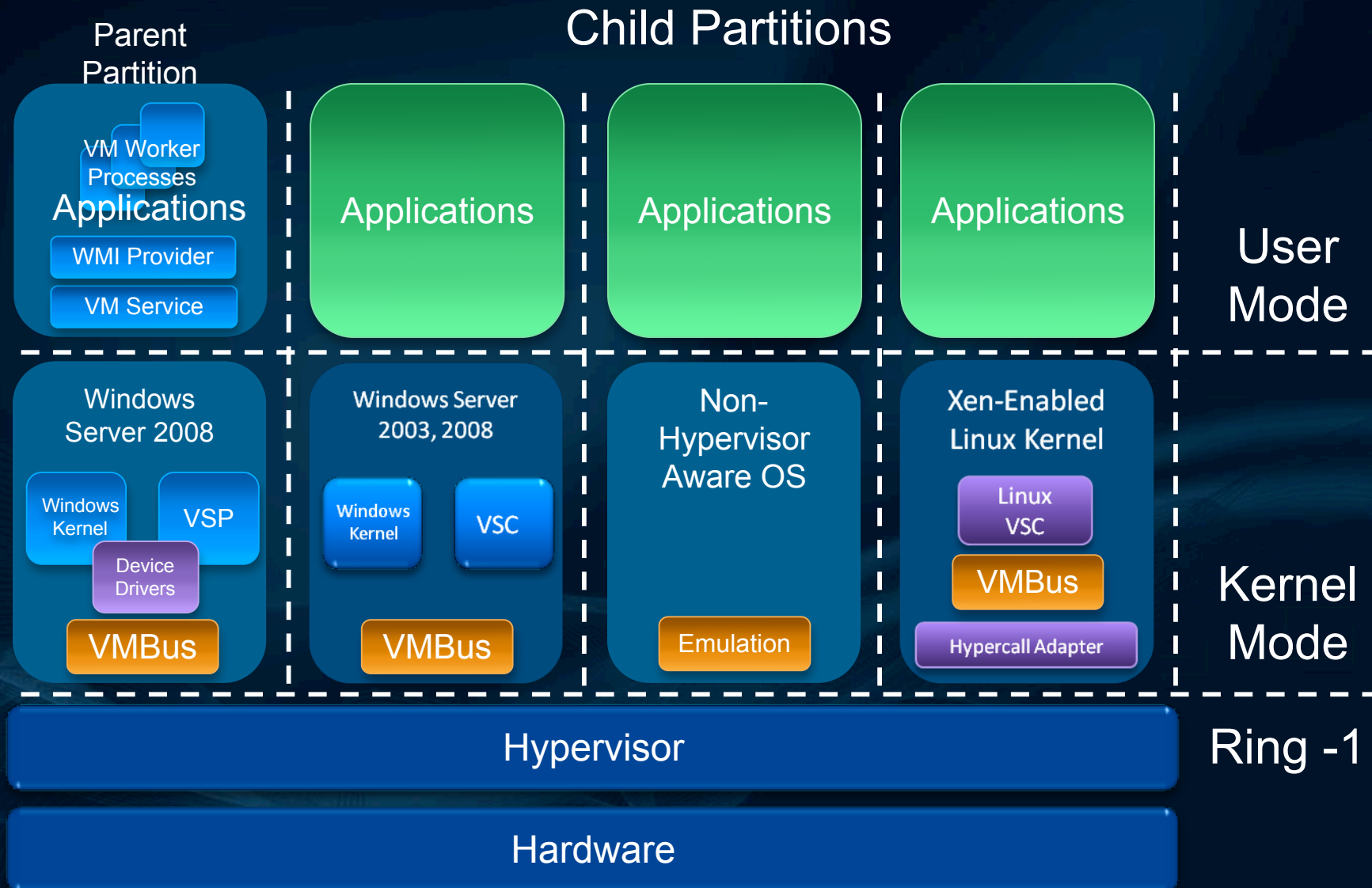
“Ring
3”

Kernel
Mode
“Ring
0”

“Ring -
1”



Architettura di Hyper-V



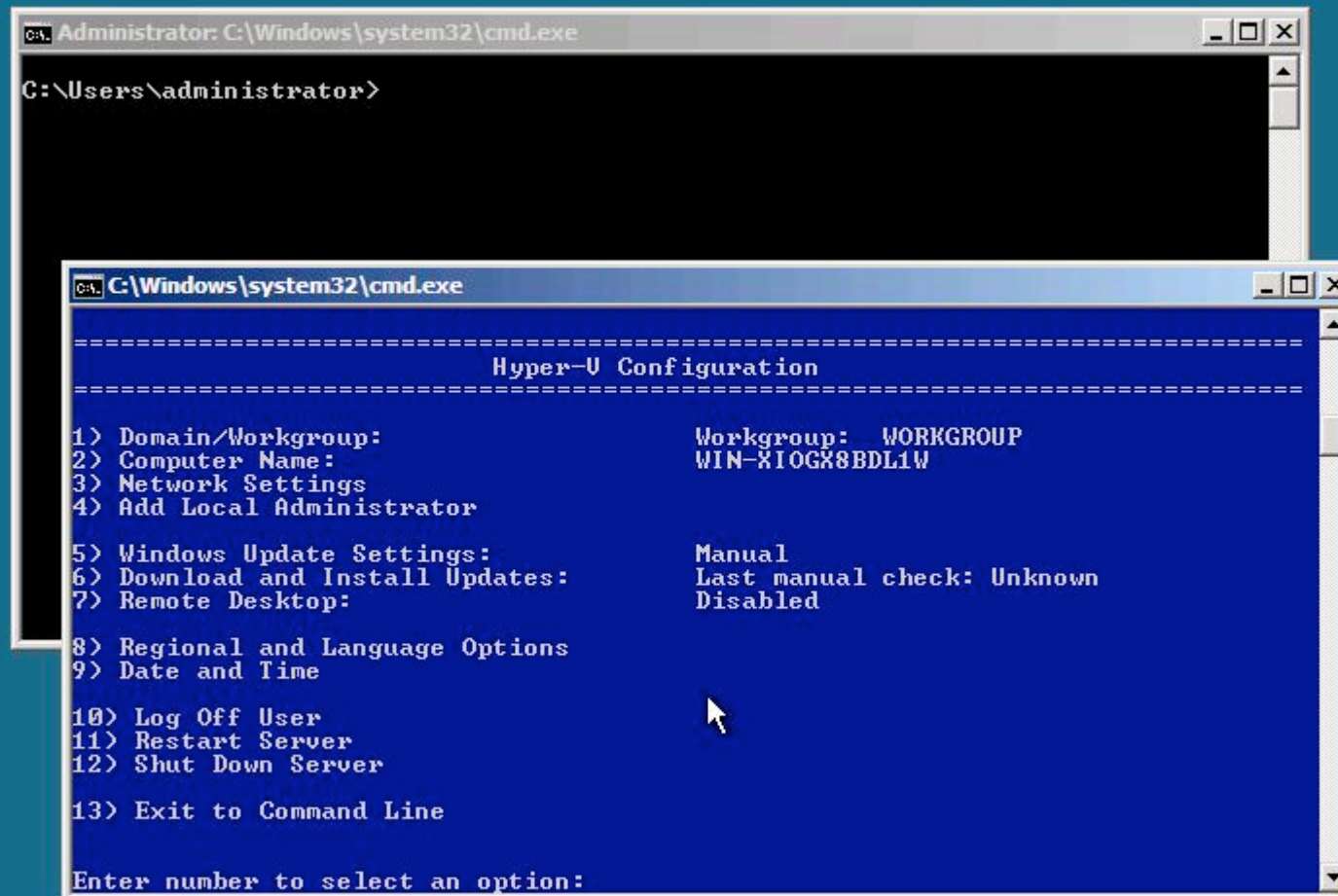
Demo

- Hyper-V



Dove trovare Hyper-V?

<http://www.technet.it>



The image shows a Windows command prompt window titled "Administrator: C:\Windows\system32\cmd.exe" with the prompt "C:\Users\administrator>". Overlaid on this is another command prompt window titled "C:\Windows\system32\cmd.exe" displaying the "Hyper-U Configuration" menu. The menu is a list of options numbered 1 to 13, with corresponding settings displayed to the right of each option. A mouse cursor is pointing at option 10, "Log Off User".

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\administrator>

C:\Windows\system32\cmd.exe
=====
Hyper-U Configuration
=====
1> Domain/Workgroup:                      Workgroup:  WORKGROUP
2> Computer Name:                         WIN-XIOGX8BDL1W
3> Network Settings
4> Add Local Administrator

5> Windows Update Settings:               Manual
6> Download and Install Updates:          Last manual check: Unknown
7> Remote Desktop:                        Disabled

8> Regional and Language Options
9> Date and Time

10> Log Off User
11> Restart Server
12> Shut Down Server

13> Exit to Command Line

Enter number to select an option:
```

4

nic

Supporto Linux

- SUSE Linux Enterprise Server 10 (x86_64)
- SUSE Linux Enterprise Server 10 (x64)
- Red Hat Enterprise Linux 5 (x86_64)

SUSE Linux Enterprise Server 10
Choose the configuration scenario

Choose Scenario



☐ Physical



☒ Virtual Machine



☐ Xen Virtual Machine

```
Terminal
File Edit View Terminal Tabs Help

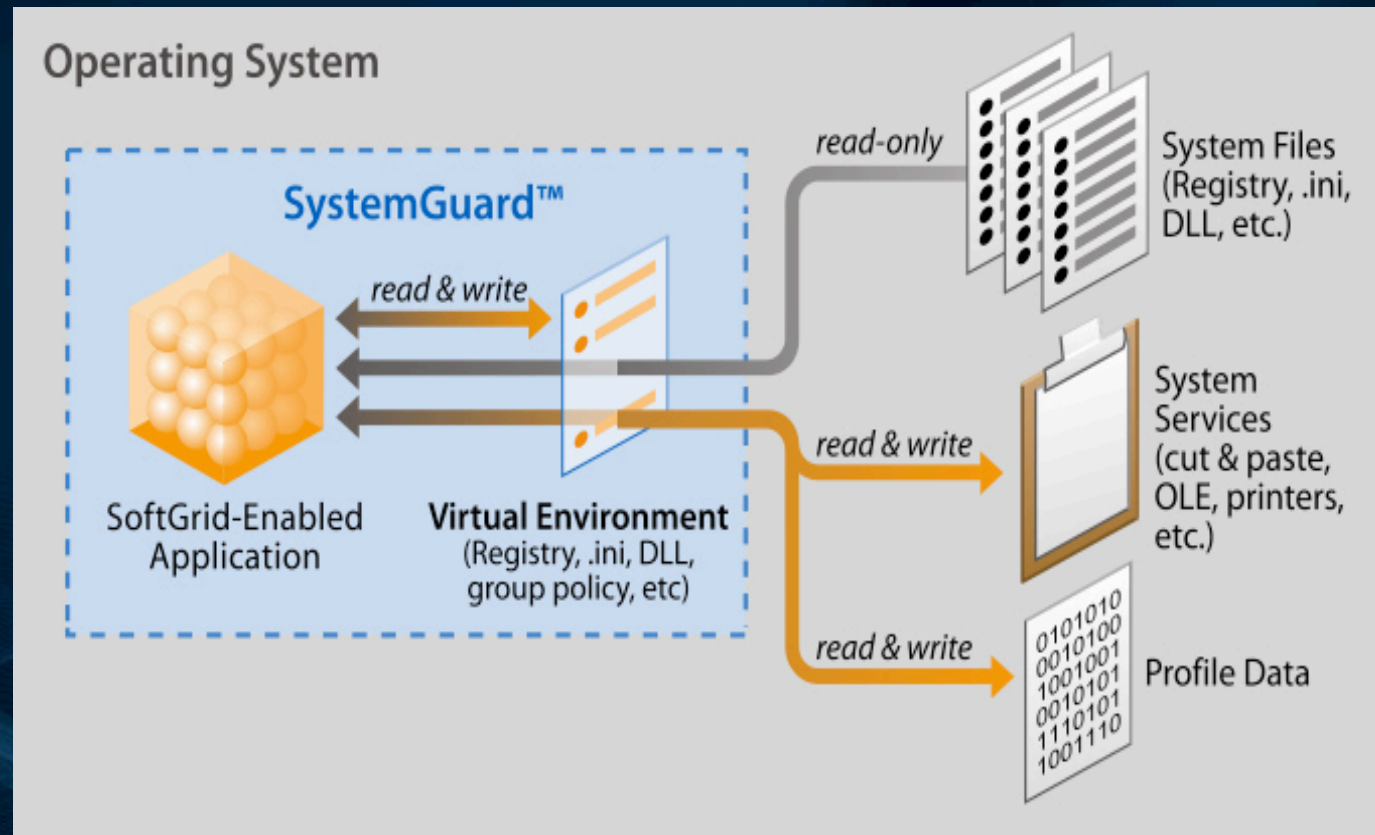
Checking if required components are installed...done.
Installing Linux integration components (vmbus, enlightened ide, enlightened scsi and network drivers) for Hyper-V...
Building vmbus driver...done.
Building blkvsc driver...done.
Building storvsc driver...done.
Building netvsc driver...done.
Installing vmbus driver...done.
Installing blkvsc driver...done.
Installing storvsc driver...done.
Installing netvsc driver...done.
Updating module dependencies. This may take a while...done.
Installing various udev rules and scripts...done.
Updating initrd image...
    Backing up /boot/initrd-2.6.16.60-0.21-smp to /boot/initrd-2.6.16.60-0.21-smp.backup0
    Done. Updated /boot/initrd-2.6.16.60-0.21-smp
Updating grub conf file...
    Done.
Installing vmbus startup script...
vmbus          0:off  1:off  2:off  3:on   4:off  5:on   6:off
Starting vmbus:
*** The drivers have been installed successfully.***
SLES:/opt/linux_ic_rtm #
```

Application Virtualization

Application Virtualization

- Virtualizzazione a livello “Software”
 - Virtualizza l’ambiente dentro al quale una applicazione si aspetta d’essere avviata
- Le applicazioni vengono eseguite all’interno di “Bolle applicative”
 - Registro di sistema
 - Librerie
 - File .ini
 - ACL

Application Virtualization



Applicazioni supportate

- Le applicazioni da virtualizzare devono essere “Sequenziate”
- Vengono inserite all'interno di file .sft
- L'applicazione viene eseguita dall'Application Virtualization Desktop Client
 - In locale
 - Streaming da server remoto

Demo

- App-V



Novità per i sistemisti

System Center Virtual Machine Manager

Virtual Machine Manager - LAB-SRV01.laboratorio.local

File View Go Actions Help

Actions Columns Jobs PRO Tips (0) Networking PowerShell Help

Virtual Machines

All Hosts

Virtual Machines (2)

Host Groups

- Overview
- All Hosts

Name	Status	Job Status	Host	Owner	CP
SCVMM 2008	Running		lab-wks01	LABORATORIO\Matteo	49
TFS 2010 Beta 1	Running		lab-wks01	LABORATORIO\Matteo	79

Filters

- Status
- Owner
- Operating system
- Added date
- Tag

Delega amministrativa

Hosts

Virtual Machines

Library

Jobs

Administration

Latest job: 100% complete

[Start-VM](#)

CPU usage:

Summary Networking and Storage Latest Job

Press CTRL + ALT + DELETE to log

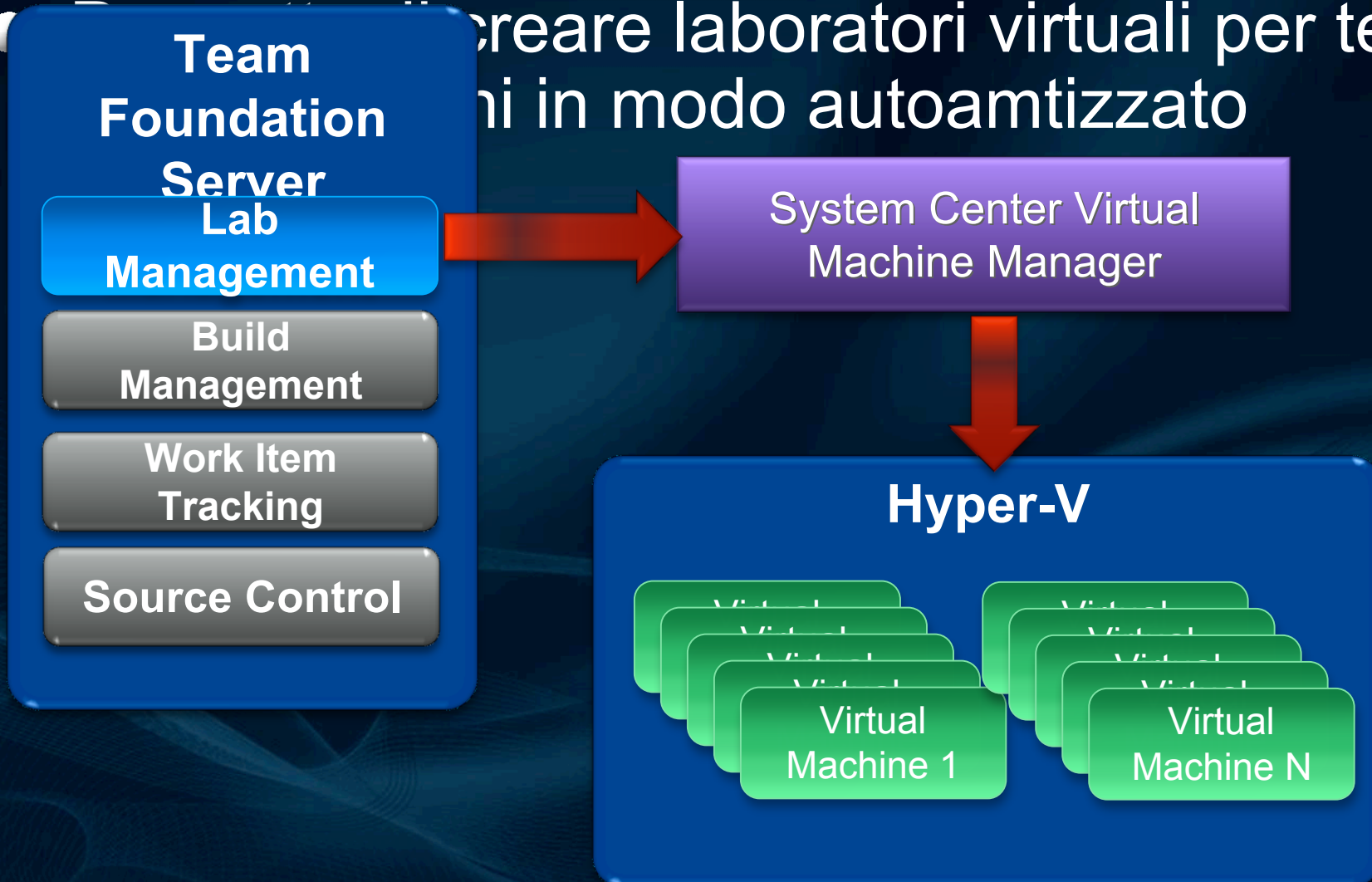
Windows Server 2008 Standard

Novità per lo sviluppo

Visual Studio Lab Management 2010

Lab Management

- Creare laboratori virtuali per test in modo autoantizzato





Environment Templates



New Edit X

Drag a column header here to group by that column.

Name	Status	Project library share	Owner	Created
Vista Template	Stored	\\LAB-SCVMM2008.la...	LABORATORIO\Ma...	16/1



Environment Template: Vista Template

Description:

Project library share: \\LAB-SCVMM2008.laboratorio.local\Enviro...



Save as VM template

Vista
Desktop Client
Stored

Linkografia

- My blog <http://www.terendo.net>
- Academic Club <http://www.academicclub.org>
- Microsoft Virtualization
<http://www.microsoft.com/virtualization/>
- Application Virtualization (App-V)
<http://www.microsoft.com/systemcenter/appv/>
- Blog Microsoft Virtualization
<http://blogs.technet.com/virtualization/>
- Blog Technet Italia: <http://blogs.technet.com/italy/>
- PierGiorgio Malusardi:
<http://blogs.technet.com/pgmalusardi/>

- <http://www.microsoft.com/italy/beit>

Modulo di Feedback:

<http://www.academicclub.org/Bologna/>

Grazie! ☺

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