



# Installation Guide



[www.sanbolic.com](http://www.sanbolic.com)

## Using Melio Clustered File System to Enable Migration of VMware Server across Hosts



## Introduction

VMware® Server is a free virtualization product with enterprise-class support that can be installed on Windows® servers. VMware Server is an easy to use product based on VMware's proven technology, which has been used by thousands of customers for more than six years.

Typically, *VMware Server* is used as a tool for partitioning a single physical server into multiple virtual machines. The standard configuration of VMware Server does not support live migration. Live migration capability enables virtual machines to be quickly moved from one physical host server to another, providing availability and load balancing among the servers. VMware does provide live migration capability with its enterprise product *ESX server* when used with its proprietary clustered file system, VMFS. However, VMware Server is not compatible with VMFS.

Sanbolic's Melio FS and LaScala Volume manager allow VMware Server virtual machines to be easily and quickly migrated among physical host servers. This is ideal for users who would prefer to use VMware Server, but want the flexibility of migration capability, or customers who are new to virtualization but want to experience distributed virtualization as part of their initial evaluation deployments.

Melio FS is a fully featured enterprise-class clustered file system and LaScala is a clustered volume manager. The products are easy to install and allow multiple host servers to have concurrent access to virtual machine images on a SAN much like VMware's VMFS. In addition, Sanbolic's products provides a range of features not supported by VMFS including unlimited volume and file sizes, multilayer checkdisk, and full support for most Windows technologies including security ACLs and Active Directory. In addition to enabling virtual machine migration, Sanbolic's products allow central assignment of application data volumes for virtual machines on a SAN, allowing application data to be quickly reassigned when a Windows Server running on a virtual machine is moved across physical hosts.

VMware server, together with Melio FS and LaScala and SAN storage, can provide attractive and flexible distributed virtualization capabilities that can cost-effectively meet the needs of many customers.

### Benefits of the VMware Server/Sanbolic Distributed Virtualization Solution

- Provision additional servers in minutes without investing in new hardware.
- Run Windows, Linux, Solaris and Netware operating systems and applications on the same physical server.
- Increase the CPU utilization of a physical server.
- Dynamically move virtual machines from one physical server to another for availability or load balancing.
- Capture the entire state of a virtual machine and roll back to that configuration with the click of a button.
- Well established enterprise class technology.



## Configuration of the Solution

A distributed virtualization solution can be easily installed using VMware Server, Melio FS, and LaScala by following these steps:

### *Hardware Required:*

Two or more Intel/AMD servers, iSCSI or Fibre Channel SAN, private TCP/IP network connection among all host servers.

### *Software Required:*

VMware Server download link: <http://www.vmware.com/products/server/>

Melio FS and LaScala evaluation download link:  
<http://www.sanbolic.com/melioFSEvaluate.htm>

### *Create Storage Volume for Virtual Machine Files*

Install Melio FS and LaScala on all hosts as described in the installation guides.  
[http://www.sanbolic.com/pdfs/LaScala\\_manual.pdf](http://www.sanbolic.com/pdfs/LaScala_manual.pdf)  
[http://www.sanbolic.com/pdfs/MelioFS\\_Installation\\_Guide.pdf](http://www.sanbolic.com/pdfs/MelioFS_Installation_Guide.pdf)

Use LaScala volume manager to manage one or more disks, create a volume and format it with the Melio FS. For this example the Melio Volume has been assigned drive letter X:\

## Assign Default Location for Virtual Machines using the VMware Server Console

Use the “Configure Host” menu to edit the “Default location for virtual machines” to point to the shared Melio volume. In this case the Melio volume is labeled X:\.

### VMware Server Console

Connected to Local host running VMware Server 1.0.2

The VMware Server Console lets you connect to virtual machines that run on VMware Server systems. Each virtual machine is equivalent to a physical server with storage, networking, memory and devices. The VMware Server Console gives you full control over virtual machines, including



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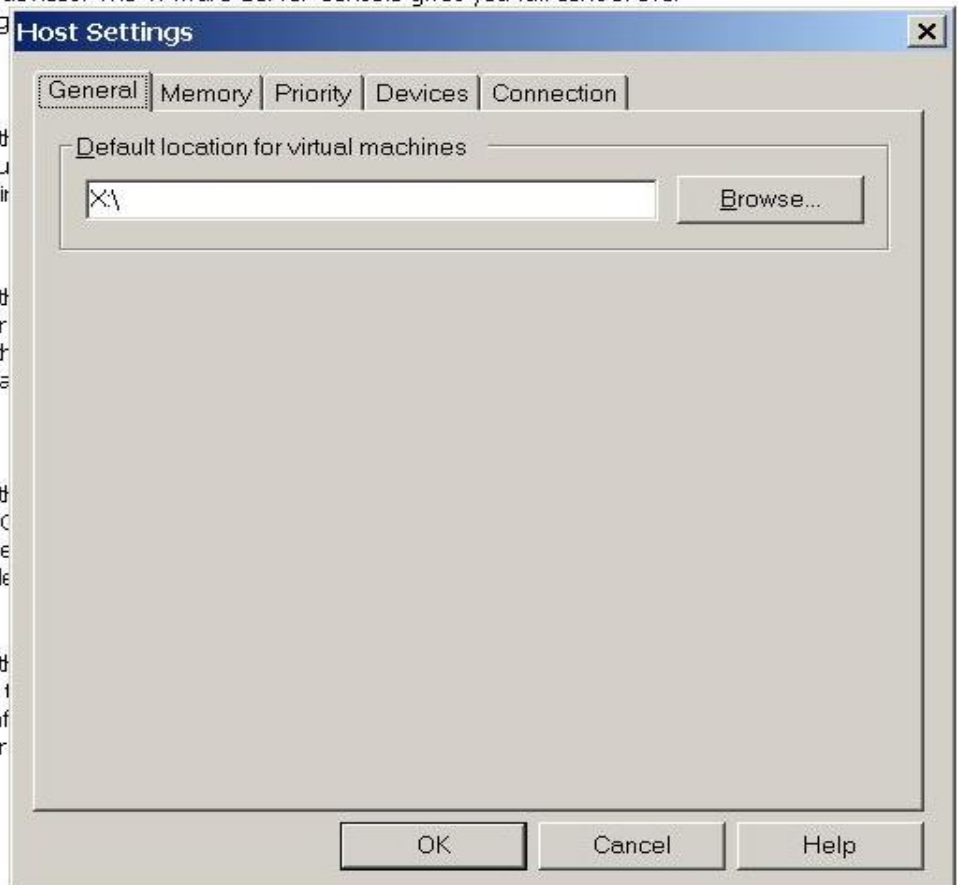
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## Create New Virtual Machines using the New Virtual Machine Wizard

Default settings can be used for all settings except for the location of the virtual machine, which should be assigned to the Melio-formatted volume.

### Windows Server 2003 Enterprise Edition

**State:** Powered off  
**Guest OS:** Windows Server 2003 Enterprise Edition  
**Configuration file:** X:\Windows Server 2003 Enterprise Edition\Windows Server 2003 Enterprise Edition.vmx  
**Version:**

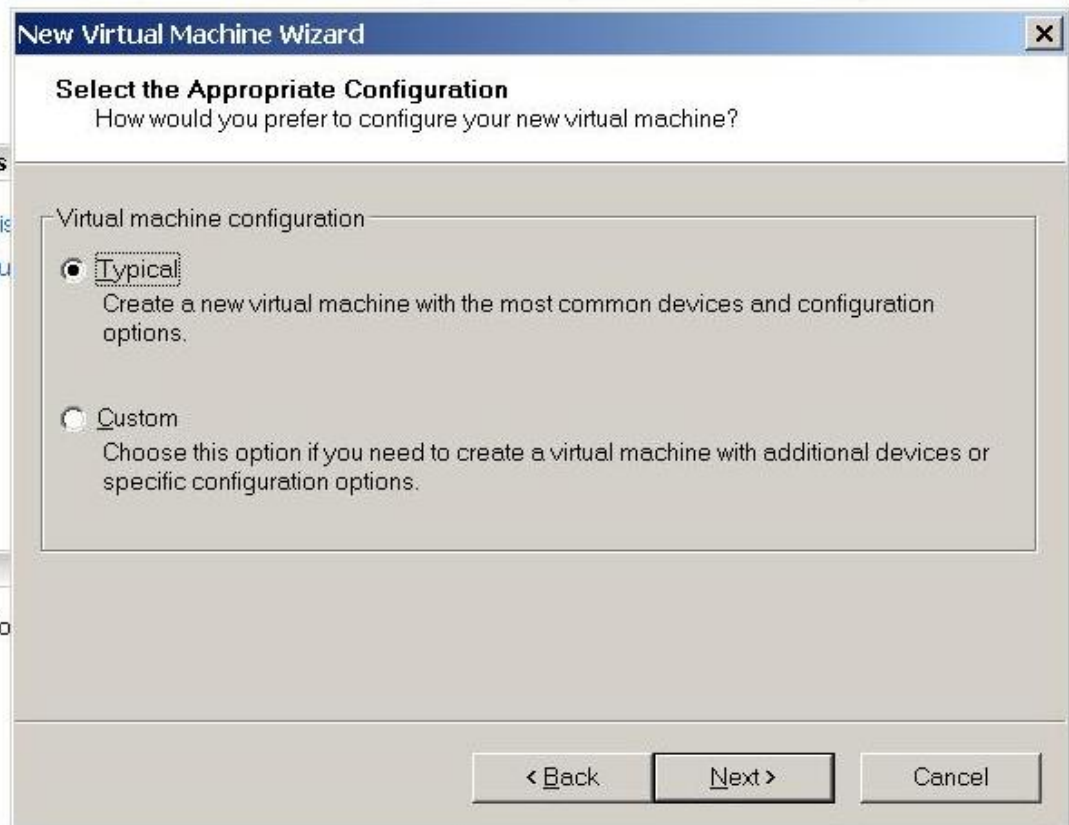
#### Commands

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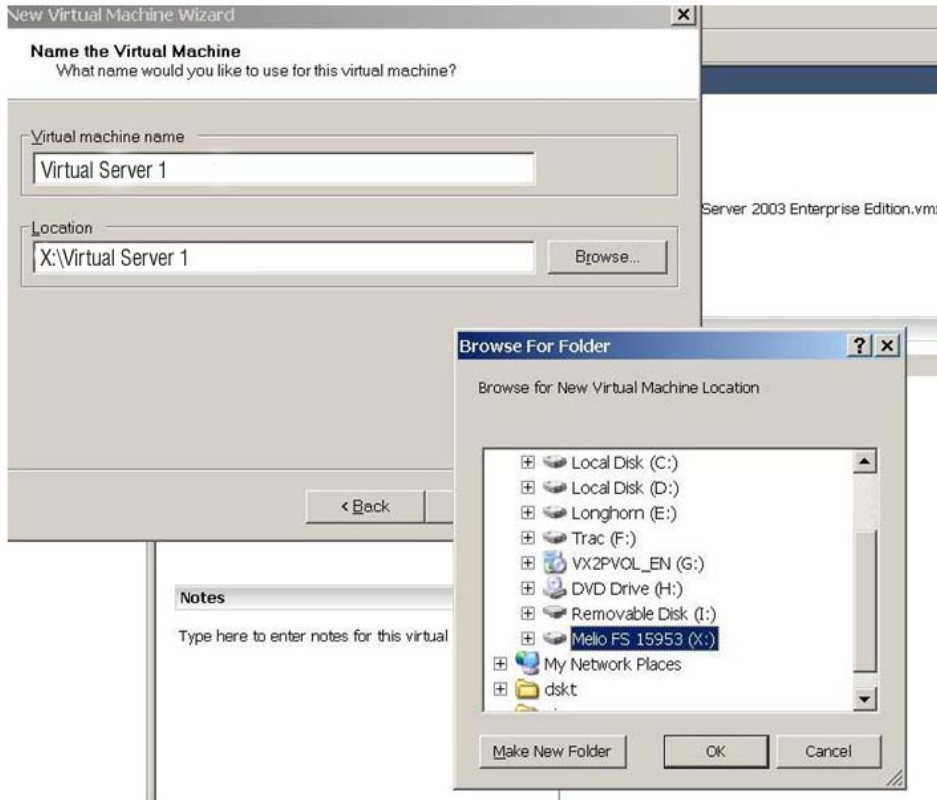
#### Notes

Type here to



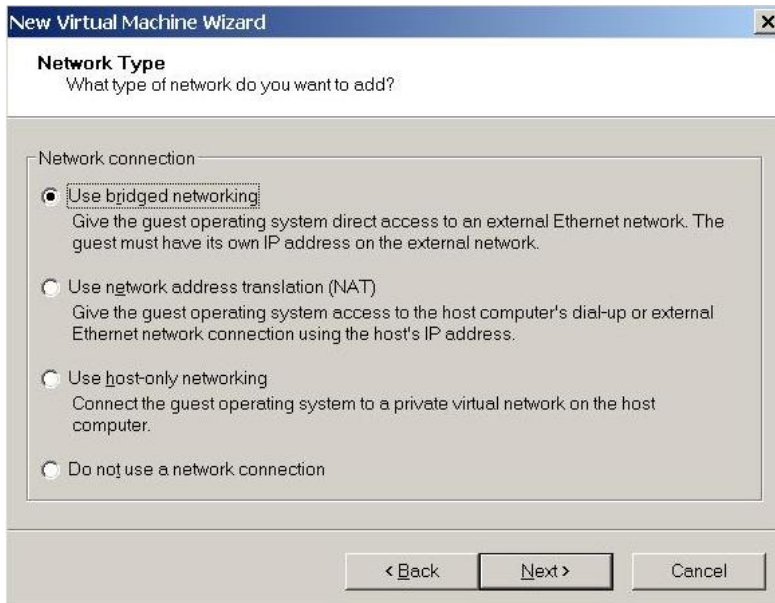
### Assign the Virtual Machines to the Melio - formatted X:\ drive

The Melio volume is accessible from all physical hosts.

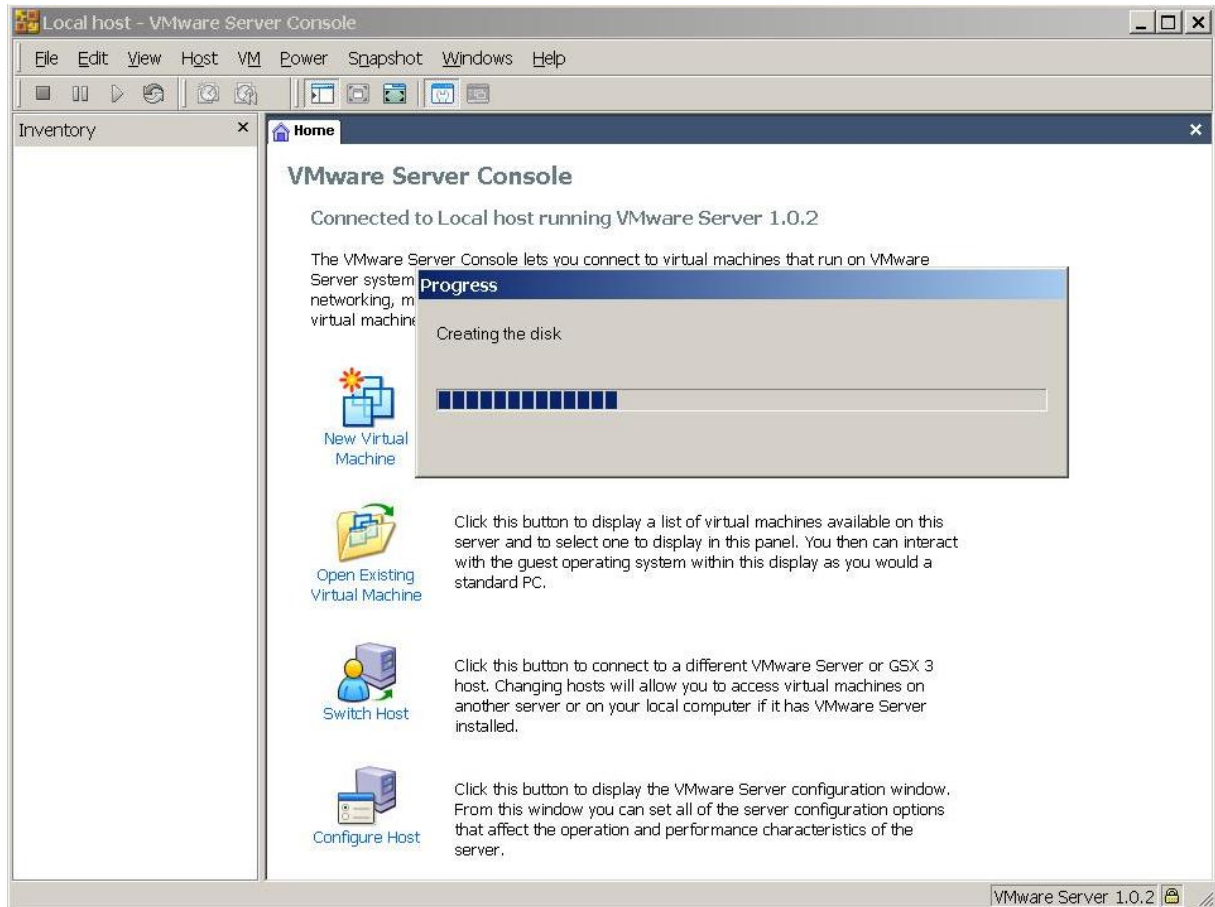


### Choose "use a bridged network" for network type

This will also allow virtual machines to have direct access to an iSCSI application data volume if being used with an iSCSI



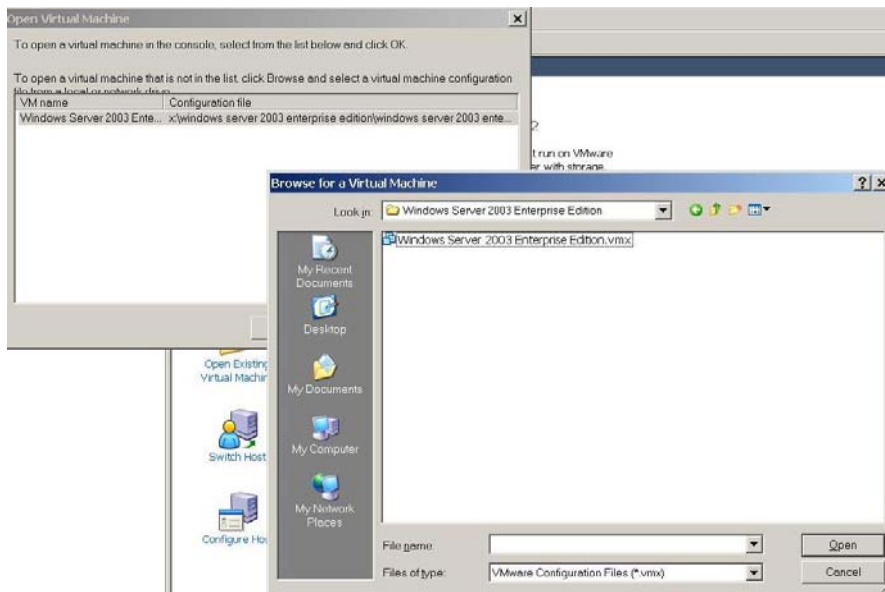
## Completing the Set Up of the Virtual Machines



Once the Virtual Machine is created, it will reside on the shared Melio volume. This will allow it to be quickly started on any server running LaScala, Melio FS and VMware Server.

To prepare for the migration of Virtual Machines across hosts, complete the following actions:

- Load all Virtual Machines from the shared Melio volume on all VMware server hosts.
- Click on "Open Virtual Machine", tap Browse and navigate to the desired Virtual Machine configuration file with the extension of "vmx".



## Migrating a Virtual Machines

In an event of planned downtime for a physical server, or the need to rebalance server loading, the virtual machine can be suspended on one physical server (fig. A) and then resumed on a different server(fig. B). The process takes less than 30 seconds. After the Virtual Machines are migrated, the first physical server can be repurposed or taken down for maintenance.

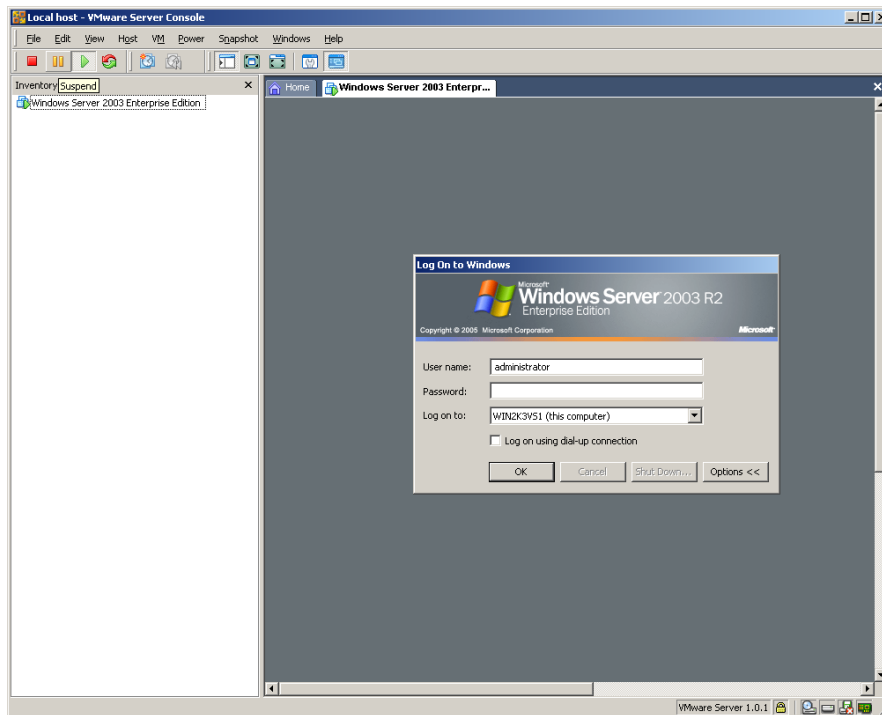


Figure A

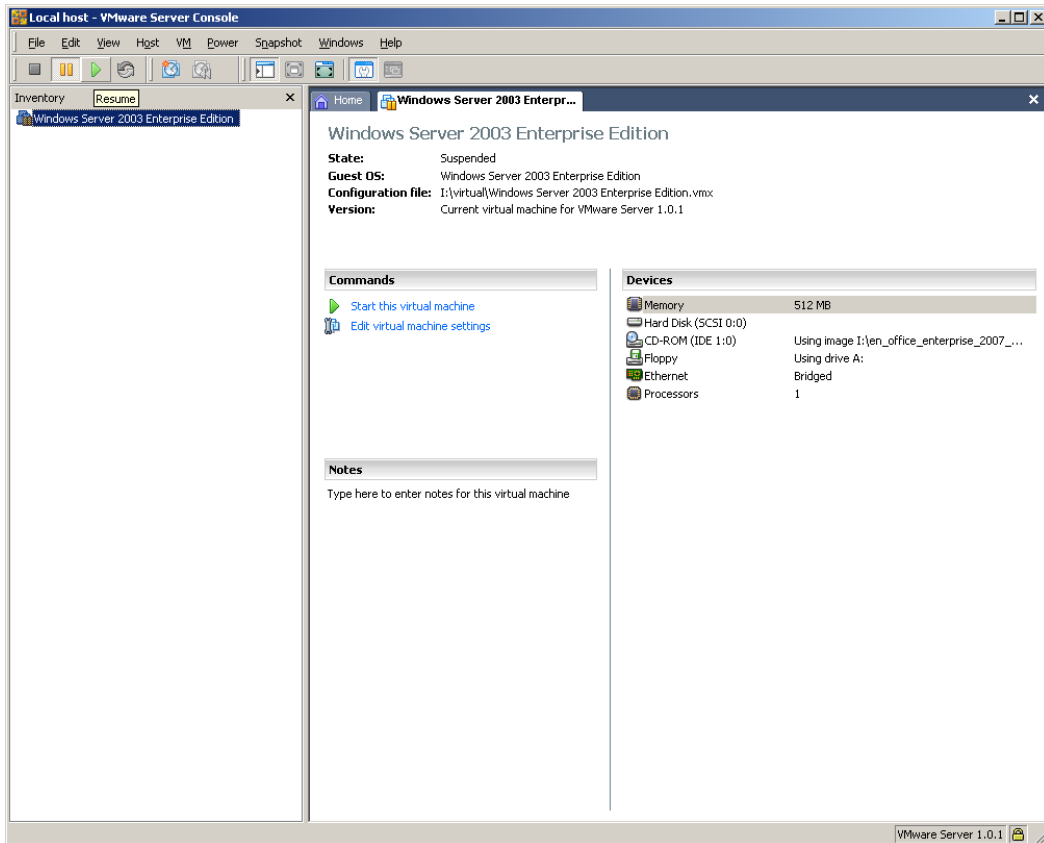


Figure B

The result is a flexible and cost effective virtualized data center infrastructure.

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Sanbolic Inc.  
304 Pleasant Street, 2nd Floor  
Watertown, MA 02472  
phone: 617 833 4242  
fax: 617 926 2808  
url: [www.sanbolic.com](http://www.sanbolic.com)  
email: [sales@sanbolic.com](mailto:sales@sanbolic.com)

