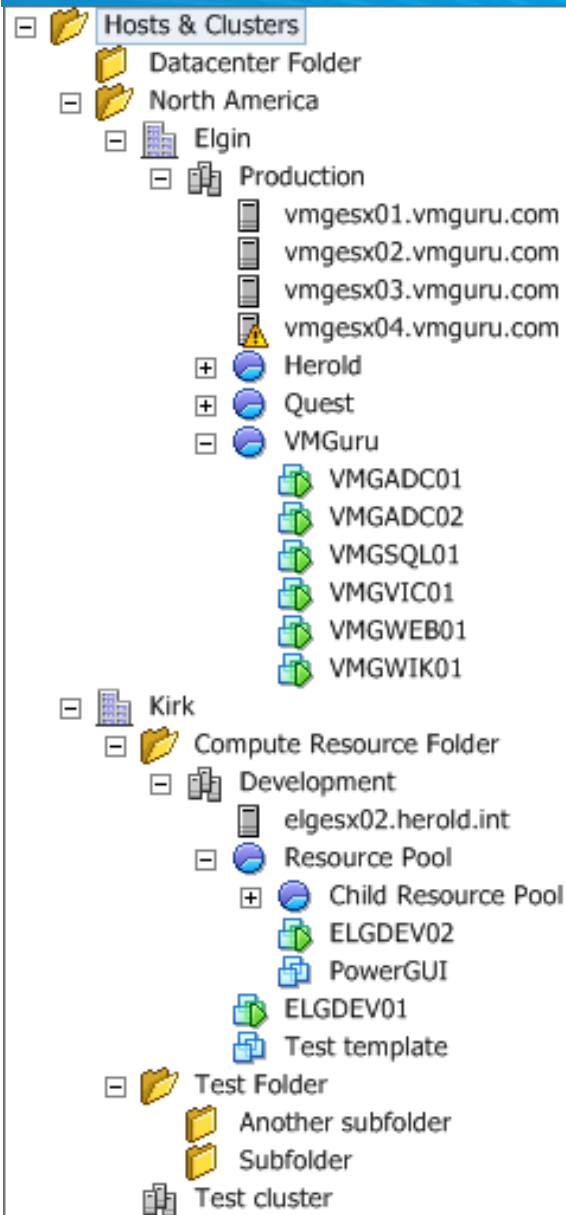


VMware VI Toolkit 1.5

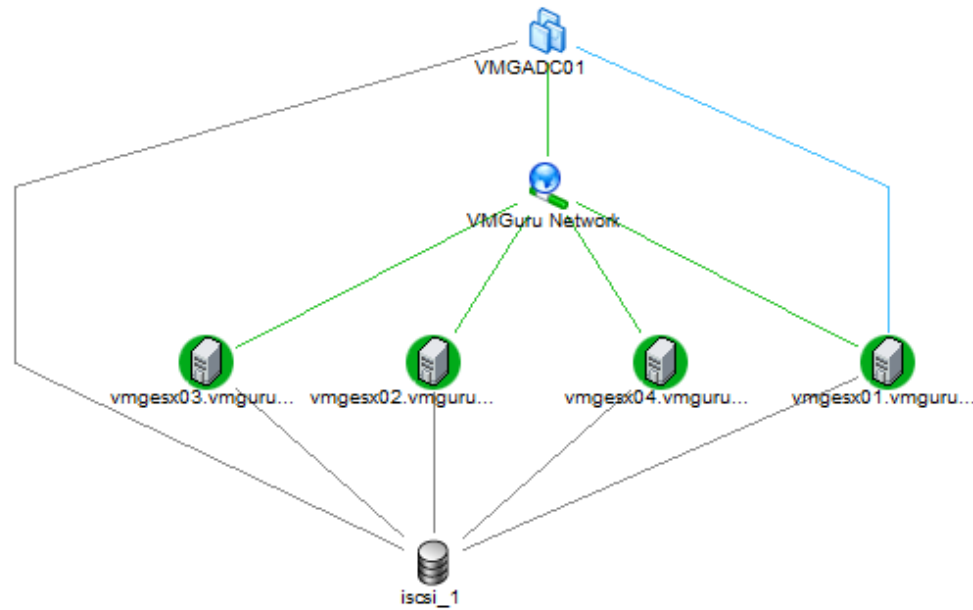
Alan Renouf

<http://virtu-al.net>





- Datacenters
- Clusters
- Folders
- Hosts
- Resource Pools
- Virtual Machines
- Datastores
- Luns
- HBA's
- Virtual Switches
- Port Groups
- Templates
- Clone
- Virtual Nic
- Physical Nic
- Virtual CPU
- Virtual Hard Disk
- More...



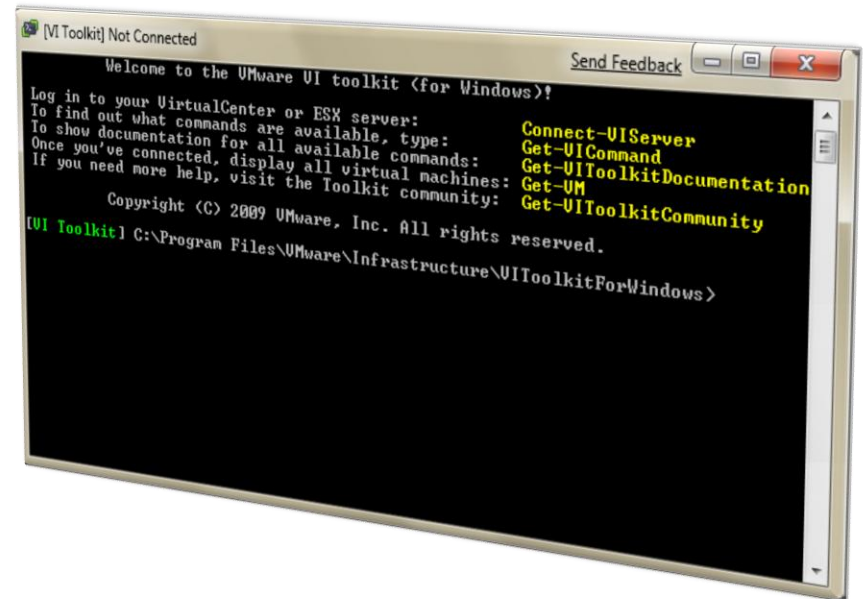
Consistent configuration means things will work

- Vmotion
- Storage Vmotion
- Templates
- Clones

VI Toolkit current version is 1.5

- Contains **157** cmdlets
 - **2** Providers
 - Datastore
 - Inventory
 - **70** Toolkit Extension cmdlets
- Codeplex project to enhance the VI Toolkit functionality.

<http://vitoolkitextensions.codeplex.com/>



70% Coverage or if you include the extensions around 75-80%

Verbs:

- Add-
- Connect-
- Disconnect-
- Dismount-
- Get-
- Invoke-
- Mount-
- Move-
- New-
- Remove-
- Restart-
- Set-
- Shutdown-
- Start-
- Stop-
- Suspend-
- Test-
- Update-
- Wait-

Nouns:

- VM
- VMHost
- VlServer
- Datastore
- VirtualSwitch
- VirtualPortGroup
- Cluster
- Template
- ResourcePool
- Task
- Log
- Folder
- Datacenter
- Template
- VMGuest
- HardDisk
- CDDrive
- FloppyDrive
- Snapshot
- Etc.....

```

[VI Toolkit] Not Connected
Send Feedback
Cndlet Add-VMHost
Cndlet Add-VMHostNtpServer
Cndlet Connect-VlServer
Cndlet Disconnect-VlServer
Cndlet Dismount-Tools
Cndlet Get-CDDrive
Cndlet Get-Cluster
Cndlet Get-Datacenter
Cndlet Get-Datastore
Cndlet Get-DrsRule
Cndlet Get-FloppyDrive
Cndlet Get-Folder
Cndlet Get-HardDisk
Cndlet Get-Inventory
Cndlet Get-Log
Cndlet Get-LogType
Cndlet Get-NetworkAdapter
Cndlet Get-OSCustomizationSpec
Cndlet Get-ResourcePool
Cndlet Get-Scsilun
Cndlet Get-ScsilunPath
Cndlet Get-Snapshot
Cndlet Get-Stat
Cndlet Get-StatInterval
Cndlet Get-StatType
Cndlet Get-Task
Cndlet Get-Template
Cndlet Get-VlCredentialStoreItem
Cndlet Get-VlEvent
Cndlet Get-View
Cndlet Get-VlObjectByVlView
Cndlet Get-VirtualPortGroup
Cndlet Get-VirtualSwitch
Cndlet Get-VIToolkitConfiguration
Cndlet Get-VIToolkitVersion
Cndlet Get-VM
Cndlet Get-VMGuest
Cndlet Get-VMHost
Cndlet Get-VMHostAccount
Cndlet Get-VMHostAdvancedConfiguration
Cndlet Get-VMHostDiagnosticPartition
Cndlet Get-VMHostFirewallDefaultPolicy
Cndlet Get-VMHostFirewallException
Cndlet Get-VMHostFirmware
Cndlet Get-VMHostModule
Cndlet Get-VMHostNetwork
Cndlet Get-VMHostNtpServer
Cndlet Get-VMHostService
Cndlet Get-VMHostSnmpp
Cndlet Get-VMHostStartPolicy
Cndlet Get-VMHostStorage
Cndlet Get-VMHostSysLogServer
Cndlet Get-VMResourceConfiguration
Cndlet Get-VMStartPolicy
Cndlet Invoke-VMScript
Cndlet Mount-Tools
Cndlet Move-Cluster
Cndlet Move-Datacenter
Cndlet Move-Folder
Cndlet Move-Inventory
Cndlet Move-ResourcePool
Cndlet Move-VM
Cndlet Move-VMHost
Cndlet New-CDDrive
Cndlet New-Cluster
Cndlet New-CustomField
Cndlet New-Datacenter
Cndlet New-Datastore
Cndlet New-DrsRule
Cndlet New-FloppyDrive
Cndlet New-Folder
Cndlet New-HardDisk
Cndlet New-NetworkAdapter
Cndlet New-OSCustomizationSpec
Cndlet New-ResourcePool
Cndlet New-Snapshot
Cndlet New-StatInterval
Cndlet New-Template
Cndlet New-VlCredentialStoreItem
Add-VMHost [-Name] <String>
Add-VMHostNtpServer [-NtpServer] <String>
Connect-VlServer [-Server] <String>
Disconnect-VlServer [-Server] <String>
Dismount-Tools [-Guest] <VMGuest>
Get-CDDrive [-VM] <VirtualMachine>
Get-Cluster [-Name] <String>
Get-Datacenter [-Name] <String>
Get-Datastore [-Name] <String>
Get-DrsRule [-Name] <String>
Get-FloppyDrive [-VM] <VirtualMachine>
Get-Folder [-Name] <String>
Get-HardDisk [-VM] <VirtualMachine>
Get-Inventory [-Name] <String>
Get-Log [-Key] <String>
Get-LogType [-VMHost] <VMHost>
Get-NetworkAdapter [-VM] <VirtualMachine>
Get-OSCustomizationSpec [-Name] <String>
Get-ResourcePool [-Name] <String>
Get-Scsilun [-CanonicalName] <String>
Get-ScsilunPath [-Scsilun] <String>
Get-Snapshot [-VM] <VirtualMachine>
Get-Stat [-Entity] <VlObject>
Get-StatInterval [-Name] <String>
Get-StatType [-Name] <String>
Get-Task [-Status] <NullLabel>
Get-Template [-Name] <String>
Get-VlCredentialStoreItem [-Name] <String>
Get-VlEvent [-Entity] <VlObject>
Get-View [-Id] <Object>
Get-VlObjectByVlView [-VlView] <VlView>
Get-VirtualPortGroup [-VMHost] <VMHost>
Get-VirtualSwitch [-VMHost] <VMHost>
Get-VIToolkitConfiguration [-Verbosity] <String>
Get-VIToolkitVersion [-Verbosity] <String>
Get-VM [-Name] <String>
Get-VMGuest [-VM] <VirtualMachine>
Get-VMHost [-Name] <String>
Get-VMHostAccount [-Id] <String>
Get-VMHostAdvancedConfiguration [-Name] <String>
Get-VMHostDiagnosticPartition [-Name] <String>
Get-VMHostFirewallDefaultPolicy [-Name] <String>
Get-VMHostFirewallException [-Name] <String>
Get-VMHostFirmware [-VMHost] <String>
Get-VMHostModule [-Name] <String>
Get-VMHostNetwork [-VMHost] <String>
Get-VMHostNtpServer [-VMHost] <String>
Get-VMHostService [-VMHost] <String>
Get-VMHostSnmpp [-Server] <String>
Get-VMHostStartPolicy [-VMHost] <String>
Get-VMHostStorage [-VMHost] <String>
Get-VMHostSysLogServer [-VMHost] <String>
Get-VMResourceConfiguration [-Name] <String>
Get-VMStartPolicy [-VM] <VirtualMachine>
Invoke-VMScript [-ScriptText] <String>
Mount-Tools [-Guest] <VMGuest>
Move-Cluster [-Cluster] <Cluster>
Move-Datacenter [-Datacenter] <Datacenter>
Move-Folder [-Folder] <Folder>
Move-Inventory [-Item] <VlObject>
Move-ResourcePool [-ResourcePool] <ResourcePool>
Move-VM [-VM] <VirtualMachine>
Move-VMHost [-VMHost] <VMHost>
New-CDDrive [-VM] <VirtualMachine>
New-Cluster [-Name] <String>
New-CustomField [-Entity] <String>
New-Datacenter [-Name] <String>
New-Datastore [-VMHost] <VMHost>
New-DrsRule [-Name] <String>
New-FloppyDrive [-VM] <VirtualMachine>
New-Folder [-Name] <String>
New-HardDisk [-VM] <VirtualMachine>
New-NetworkAdapter [-VM] <VirtualMachine>
New-OSCustomizationSpec [-OSCustomizationSpec] <String>
New-ResourcePool [-Location] <String>
New-Snapshot [-VM] <VirtualMachine>
New-StatInterval [-Name] <String>
New-Template [-Name] <String>
New-VlCredentialStoreItem [-Name] <String>
    
```

Example 1... List all virtual machines

[VI Toolkit] C:\> Get-VM

Name	PowerState	Num CPUs	Memory (MB)
ELGDEV02	PoweredOn	1	384
Test template	PoweredOff	1	384
ELGDEV03	PoweredOn	1	384
VMGVIC01	PoweredOn	1	512
VMGVCT01	PoweredOff	1	384

Example 2... List all VM partition sizes from inside the VM

```
ForEach ($VM in (Get-VM | Get-View)){($VM.Guest.Disk | Select
@{N="Name";E={$VM.Name}}, DiskPath,
@{N="Capacity(MB)";E=[[math]::truncate($_.Capacity / 1MB)}},
@{N="Free Space(MB)";E=[[math]::truncate($_.FreeSpace / 1MB)}},
@{N="Free Space %";E=[[math]::Round(((100 * $_.FreeSpace) /
($_.Capacity),0))}] | Format-Table}
```

Name	DiskPath	Capacity(MB)	Free Space(MB)	Free Space %
ELGFILO1	C:\	8181	2838	35
ELGFILO1	D:\	61436	14539	24
VMGADC01	C:\	8181	3974	49
VMGWEB01	/boot	235	211	90

Example 3... Create a new virtual machine and add it to a Resource Pool

```
New-VM -Name DevelopmentVM2 -VMHost (Get-VMHost Host01.mycompany.com) -ResourcePool
(Get-ResourcePool DevelopmentResources) -DiskMB 4000 -MemoryMB 256 -RunAsync
```

Example 4... Create 100 new virtual machines !

```
(1..100) | ForEach {New-VM -Name VM$_ -VMHost (Get-VMHost Host01.mycompany.com) -DiskMB 50
-MemoryMB 1024 -RunAsync}
```

Example 5... Delete 100 virtual machines

```
(1..100) | ForEach {Remove-VM VM$_ -RunAsync}
```

What about the other 20% - Get-View + SDK = Fun !

VMware VI Toolkit

Scripts

Guest Provisioning System

File Tools Help

Virtual Center
Virtual Center: 10.21.10.80 Refresh

VI Options
VMhost: 10.16.83.241 Folder: Datacenters
Datastore: 200GB_Shared Resource pool: Host Pool

Guest Options
Template: VC VM Network(s): Demo Network Disk(s): 4 Gb
Memory: 512mb vCPU: 1
Boot delay (ms): BIOS setup: Poweron:

OS Options
Computername: VC 6 OS Key: Local admin pswd: Subnetmask: 255.0.0.0 Timezone: Gateway: 10.24.1.254 DNS server: Fullname: [The 6th VC clone] Domain: Organisation: Account: Password:

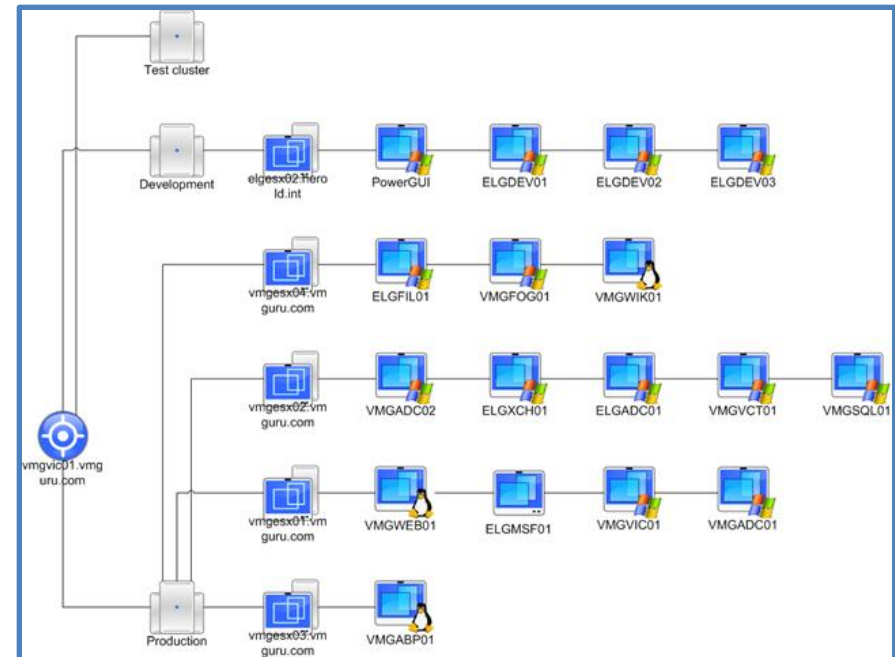
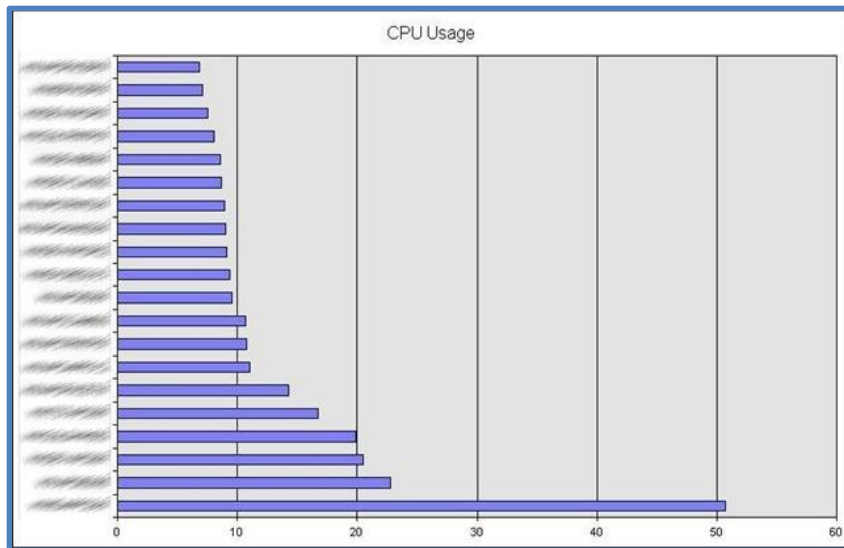
Guest(s)
VC 1
VC 2
VC 3
VC 4
VC 5

Add Delete
Clear Execute

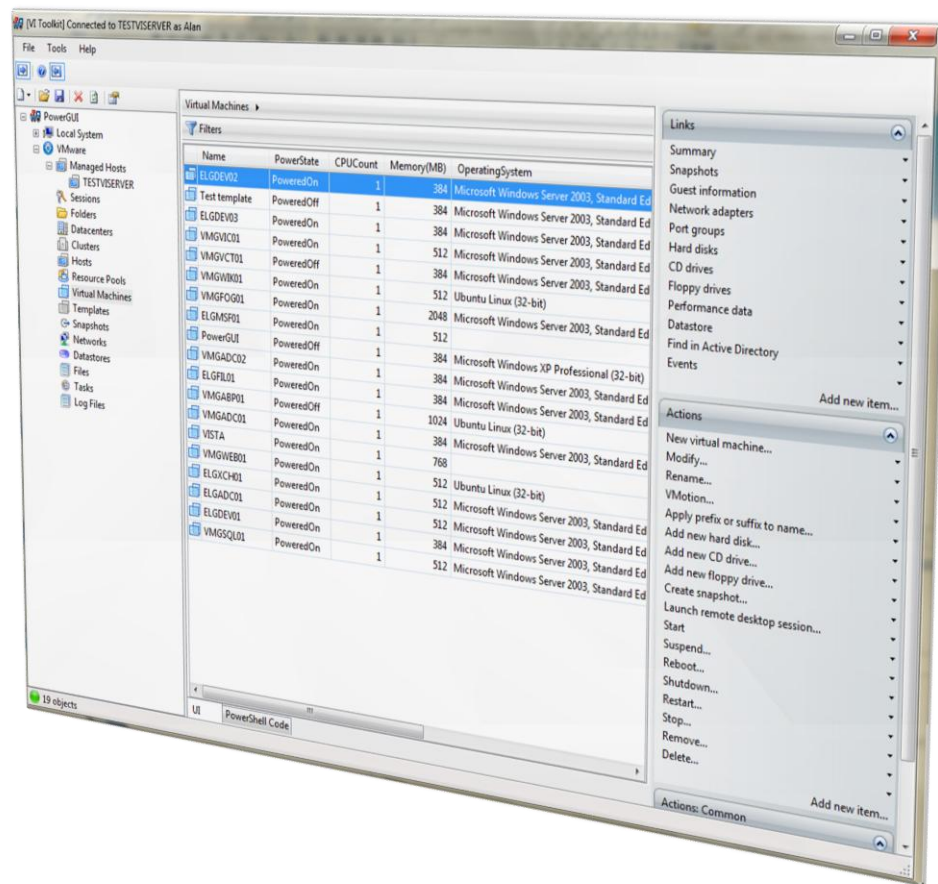
Test

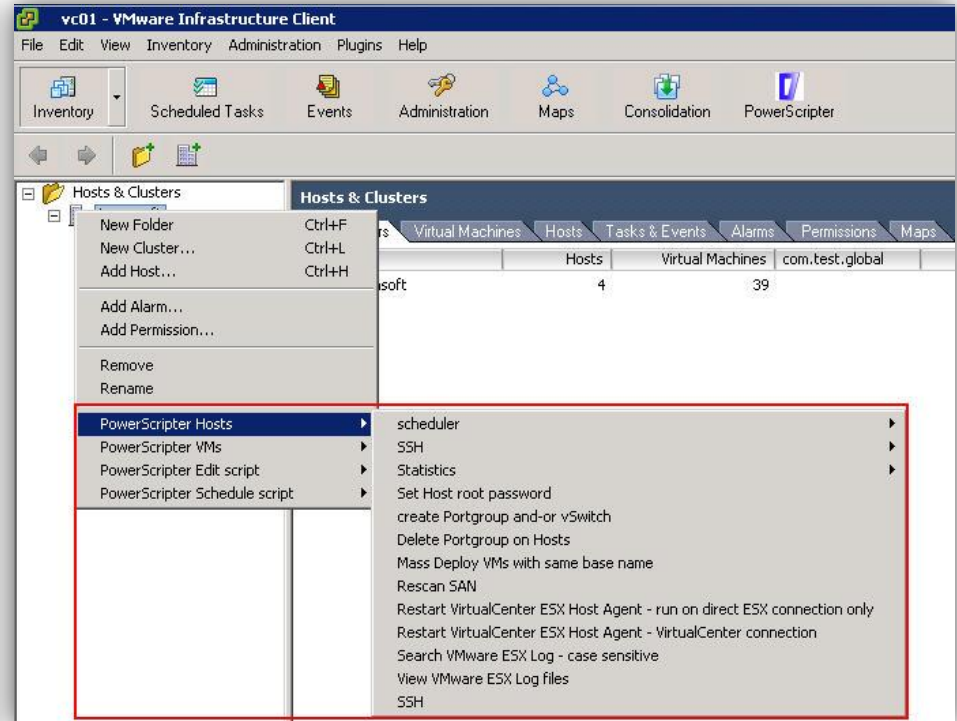
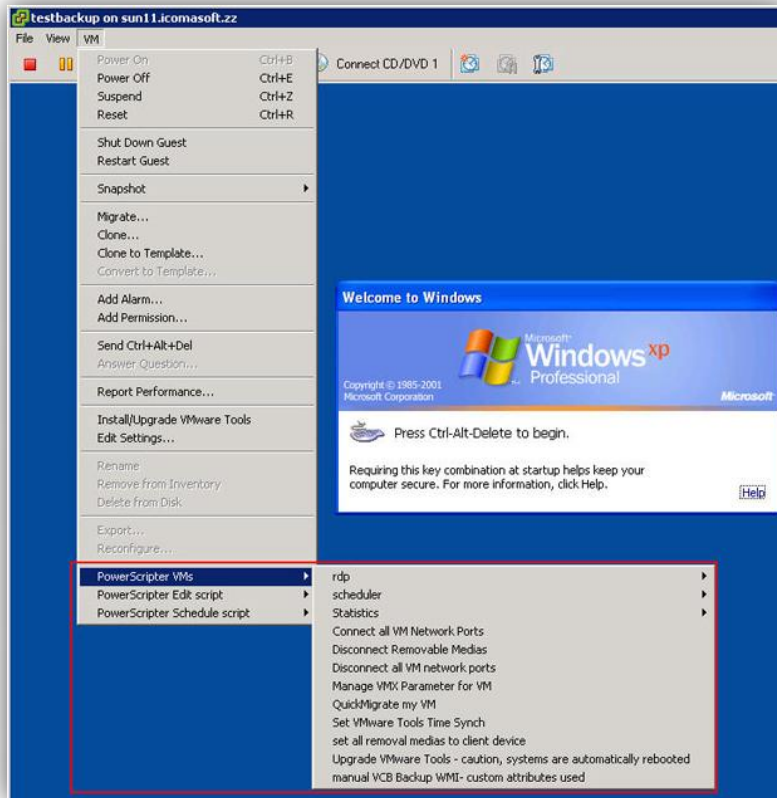
Summary Virtual Machines Hosts

Name	Snapshots
TST	1



- Management of multiple VMware Virtual Center, ESX, ESXi and VMware Server hosts
- Single sign-on to multiple hosts using the same credentials
- Ability to browse through inventory hierarchies on Virtual Center
- Ability to view topological data for any managed server
- Management of datacenters, clusters, resource pools, hosts, folders, virtual machines, templates, snapshots, networks, datastores, files, tasks and log files
- Automatic generation of multiple infrastructure diagrams in Visio





- Save 2 hours daily due automation
 - Simplify monitoring and analysis
 - Schedule recurring tasks
 - Integrate your own functions into VMware
- Choose from more than 35 standard functions (templates)

- Administrate one or one-thousand virtual machines
- Cover every aspect of VMware VI administration with a best-of-breed toolkit
- Get reports on all script executions
- VMware Management Redefined

How is PowerShell accepted by a non Microsoft company and their users ?



Demo & Questions

Alan Renouf

<http://virtu-al.net>