The Power of Remoting

# Use PowerShell to Inventory a Network

Using only PowerShell, create an inventory of our test network. Use CIM and remoting as appropriate to answer the following questions.

## Setup

Open your remote desktop software and connect to our class network using the following information.  
Computer: **cit361-lab.citwdd.com**.  
User: cit361\<username> Your mailbox portion of your BYUI email address. If your BYUI email is [lin87690@byui.edu](mailto:lin87690@byui.edu) you would use **cit361\lin87690** for your username.  
Password: Your I-Number (if you changed your password earlier in the semester, you will need to use that one).

## Hints

* Get a list of the CIM classes with the command Get-CIMClass. Search the CIMClasses for relevant information.
* See what properties a CIM class returns by looking at the CimClassProperties property.
  + For example, (Get-CimClass Win32\_PingStatus).CimClassProperties.
* Create an array of names and possibly CIMSessions to make your work go faster.
* Use Select-Object to return only the information you want.
  + You can create a calculated column by creating a hashtable with an item for name and expression that defines the column you would like to create.
  + Get-ChildItem returns a Length property in bytes, if you would like output that shows KB you could do something like the following:
    - Get-ChildItem|Select Name,@{Name=’Size’;Expression={$\_.length/kb}}
  + Or the following for a prettier MB:
    - dir|Select Name,@{Name=’Size’;Expression={"$([math]::round($\_.length/1mb,2)) MB"}}

# Inventory Requirements

Answer the questions by filling in the tables below with the appropriate information. If you don’t like typing, figure out how to make the table in PowerShell then copy and paste the results where the table is. Add rows as necessary.

1. What is the name of the computer your logged in to? horace.cit361.com
2. Discover the names of the computers on the domain (hint: Get-AdComputer -filter \*) List them here: DC, Gilliam, Halt,Horace,Eric,SLAYGORE,PRoGET
3. Are there other computers on the network? See if you can use PowerShell to ping each address on the network and see what addresses are active. Use the ARP table to see what you found. arp -a (arp -a)
4. Write your solution here: A picture containing text, menu, screenshot, font

   Description automatically generated
5. What addresses are active?
6. What version of PowerShell is running on each computer? (Hint: $PSVersionTable)

|  |  |  |  |
| --- | --- | --- | --- |
| Computer | PSVersion | Edition | CLRVersion |
| DC.cit361.com | 5.1.17763.3770 | Desktop | 4.0.30319.42000 |
| Gillam.cit361.com | 4.0 |  | 4.0.30319.42000 |
| halt.cit361.com | 5.1.19041.1682 | Desktop | 4.0.30319.42000 |
| slaygore.cit361.com | 5.1.14393.5582 | Desktop | 4.0.30319.42000 |
| proget.cit361.com | 5.1.20348.1366 | Desktop | 4.0.30319.42000 |
| Horace.cit361.com | 5.1.19041.3031 | Desktop | 4.0.30319.42000 |
|  |  |  |  |

1. Which operating system is running on each computer? (Hint: get-CimInstance)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Computer | OS | Version | Build | Architecture |
| DC.cit361.com | Microsoft Windows Server 2019 Datacenter | 10.0.17763 | 17763, | 64-bit |
| Gillam.cit361.com | : Microsoft Windows 8.1 Enterprise | 6.3.9600 | 9600, | 64-bit |
| halt.cit361.com | Microsoft Windows 10 Education | 10.0.19044 | 19044, | 64-bit |
| slaygore.cit361.com | Microsoft Windows Server 2016 Datacenter | 10.0.14393 | 14393, | 64-bit |
| proget.cit361.com | Microsoft Windows Server 2022 Datacenter | 10.0.20348 | 20348 | 64-bit |
| Horace.cit361.com | Microsoft Windows 10 Education | 10.0.19045 | 19045 | 64-bit |

1. What is the MAC address for each computer? (Hint: Get-NetAdapter)

|  |  |  |
| --- | --- | --- |
| Computer | Network Adapter | MacAddress |
| DC.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:B8:42:C4 |
| Gillam.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:B8:68:98 |
| halt.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:B8:94:45 |
| slaygore.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:B8:E6:F2 |
| proget.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:93:6B:3D |
| Horace.cit361.com | Intel(R) 82574L Gigabit | 00:50:56:B8:B9:BD |

1. List the disk volumes on each computer with capacity, free space, and percent free; do not include DVD’s.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Computer | Drive Letter | Volume Name | Size | FreeSpace | Free% |
| DC.cit361.com | C | - | 279.46GB | 250.29GB | 89.56% |
| Gillam.cit361.com | C | - | 54.66GB | 35.08GB | (64.18% |
| halt.cit361.com | C | - | 31.43GB | 0.65GB | (2.06% |
| slaygore.cit361.com | C | - | 39.51GB | 27.57GB | 69.77% |
| proget.cit361.com | C | - | 89.36GB | 76.18GB | 85.24% |
| Horace.cit361.com | C | - | 118.88GB | 70.17GB | 59.02% |

1. How many services are on each computer and how many are running?

|  |  |  |
| --- | --- | --- |
| Computer | Service Count | Running Count |
| DC.cit361.com | 211 | 74 |
| Gillam.cit361.com | 178 | 65 |
| halt.cit361.com | 240 | 83 |
| slaygore.cit361.com | 240 | 83 |
| proget.cit361.com | 129 | 61 |
| Horace.cit361.com | 326 | 128 |
| Eric | 240 | 83 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. Who manufactured the BIOS for the computers? What version is the BIOS? Since these are VMs, you only need to do this for one computer.

|  |  |  |
| --- | --- | --- |
| Computer | Manufacturer | Version |
| DC.cit361.com | Phoenix Technologies LTD | 6.00 |
| Gillam.cit361.com | Phoenix Technologies LTD | 6.00 |
| halt.cit361.com | Phoenix Technologies LTD | 6.00 |
| slaygore.cit361.com | Phoenix Technologies LTD | 6.00 |
| proget.cit361.com | VMware, Inc. | Version: VMW71.00V.18227214.B64.2106252220 |
| Horace.cit361.com | Phoenix Technologies LTD | 6.00 |
| Eric |  |  |

1. What IPv4 addresses are on each computer? (Hint: Get-NetIpaddress)

|  |  |
| --- | --- |
| Computer | IPAddress |
| DC.cit361.com | 192.168.1.2 |
| Gillam.cit361.com | 192.168.1.155 |
| halt.cit361.com | 192.168.1.101 |
| slaygore.cit361.com | 192.168.1.7 |
| proget.cit361.com | 192.168.1.8 |
| Horace.cit361.com | 192.168.1.10 |
| Eric | 192.168.1.105 |

1. How much physical memory is in each computer?

|  |  |
| --- | --- |
| Computer | Memory in MB |
| DC.cit361.com | 16383.49 MB |
| Gillam.cit361.com | 6143.49 MB |
| halt.cit361.com | 4095.49 MB |
| slaygore.cit361.com | 4095.49 MB |
| proget.cit361.com | 4095.02 MB |
| Horace.cit361.com | 17559.49 MB |
| Eric |  |

1. How many processors are in each computer?

|  |  |
| --- | --- |
| Computer | # of Processors |
| DC.cit361.com | 4 |
| Gillam.cit361.com | 2 |
| halt.cit361.com | 1 |
| slaygore.cit361.com | 2 |
| proget.cit361.com | 1 |
| Horace.cit361.com | 2 |
| Eric |  |

1. Are all the computers in the same time zone?

|  |  |
| --- | --- |
| Computer | Time Zone |
| DC.cit361.com | UTC-08:00 |
| Gillam.cit361.com | UTC-00:00 |
| halt.cit361.com | UTC-08:00 |
| slaygore.cit361.com | UTC-07:00 |
| proget.cit361.com | UTC-07:00 |
| Horace.cit361.com | UTC-07:00 |
| Eric |  |

1. List the file shares on each computer.

|  |  |
| --- | --- |
| Computer | Share Name |
| DC.cit361.com | C$,IPC$,Admin$,management,netlogon,sysvol |
| Gillam.cit361.com | C$,IPC$,ADMIN$ |
| halt.cit361.com | C$,IPC$ ADMIN$ |
| slaygore.cit361.com | C$,IPC$ ADMIN$ |
| proget.cit361.com | C$,IPC$ ADMIN$ |
| Horace.cit361.com | C$,IPC$ ADMIN$ |
| Eric |  |

1. Choose one other feature or setting you want to know.  
   Describe the feature and results below.

DC.cit361.com : Number of Installed Updates: 22

Gillam.cit361.com : Number of Installed Updates: 160

halt.cit361.com : Number of Installed Updates: 9

eric : Number of Installed Updates: 0

slaygore.cit361.com : Number of Installed Updates: 14

proget.cit361.com : Number of Installed Updates: 4

Horace.cit361.com : Number of Installed Updates: 25