

**ВІЙСЬКОВИЙ ІНСТИТУТ ТЕЛЕКОМУНІКАЦІЙ ТА ІНФОРМАТИЗАЦІЇ
Імені ГЕРОЇВ КРУТ**



**Кафедра №22
КОМП'ЮТЕРНИХ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ**

Навчальна дисципліна :“Операційні системи”

Змістовий модуль 1.

“Функціональні та експлуатаційні риси сучасних ОС.”

Заняття 9. “Базові команди адміністрування ОС.”



1. Базові команди адміністрування Windows (PS)



Рекомендована література

3





1. Базові команди адміністрування Linux (bash)



```
c:\Users>help
For more information on a specific command, type HELP command-name
ASSOC          Displays or modifies file extension associations.
ATTRIB        Displays or changes file attributes.
BREAK         Sets or clears extended CTRL+C checking.
BCDEDIT       Sets properties in boot database to control boot loading.
CACLS         Displays or modifies access control lists (ACLs) of files.
CALL          Calls one batch program from another.
CD            Displays the name of or changes the current directory.
CHCP          Displays or sets the active code page number.
CHDIR         Displays the name of or changes the current directory.
CHKDSK        Checks a disk and displays a status report.
CHKNTFS       Displays or modifies the checking of disk at boot time.
CLS           Clears the screen.
CMD           Starts a new instance of the Windows command interpreter.
COLOR         Sets the default console foreground and background colors.
COMP          Compares the contents of two files or sets of files.
COMPACT       Displays or alters the compression of files on NTFS partitions.
CONVERT       Converts FAT volumes to NTFS. You cannot convert the
              current drive.
COPY          Copies one or more files to another location.
DATE          Displays or sets the date.
DEL           Deletes one or more files.
DIR           Displays a list of files and subdirectories in a directory.
DISKPART      Displays or configures Disk Partition properties.
DOSKEY        Edits command lines, recalls Windows commands, and
              creates macros.
```



Перелік команд

<https://docs.microsoft.com/ru-ru/windows-server/administration/windows-commands/windows-commands>

Особливості написання скриптів

<https://docs.microsoft.com/ru-ru/windows-server/administration/windows-commands/cscript>

<https://docs.microsoft.com/ru-ru/windows-server/administration/windows-commands/wscript>



```
c:\Users>help/?
Provides help information for Windows commands.

HELP [command]

    command - displays help information on that command.

c:\Users>dir/?
Displays a list of files and subdirectories in a directory.

DIR [drive:][path][filename] [/A[:attributes]] [/B] [/C] [/D] [/L] [/N]
  [/O[:sortorder]] [/P] [/Q] [/R] [/S] [/T[:timefield]] [/W] [/X] [/4]

  [drive:][path][filename]
    Specifies drive, directory, and/or files to list.

  /A          Displays files with specified attributes.
attributes   D Directories           R Read-only files
              H Hidden files         A Files ready for archiving
              S System files         I Not content indexed files
              L Reparse Points       O Offline files
              - Prefix meaning not

  /B          Uses bare format (no heading information or summary).
  /C          Display the thousand separator in file sizes. This is the
              default. Use /-C to disable display of separator.
  /D          Same as wide but files are list sorted by column.
  /L          Uses lowercase.
  /N          New long list format where filenames are on the far right.
  /O          List by files in sorted order.
```



```
c:\Users>ipconfig/?
```

USAGE:

```
ipconfig [/allcompartments] [/? | /all |  
        /renew [adapter] | /release [adapter] |  
        /renew6 [adapter] | /release6 [adapter] |  
        /flushdns | /displaydns | /registerdns |  
        /showclassid adapter |  
        /setclassid adapter [classid] |  
        /showclassid6 adapter |  
        /setclassid6 adapter [classid] ]
```

where

```
adapter          Connection name  
                  (wildcard characters * and ? allowed, see examples)
```

Options:

```
/?              Display this help message  
/all            Display full configuration information.  
/release        Release the IPv4 address for the specified adapter.  
/release6       Release the IPv6 address for the specified adapter.  
/renew          Renew the IPv4 address for the specified adapter.  
/renew6         Renew the IPv6 address for the specified adapter.  
/flushdns       Purges the DNS Resolver cache.  
/registerdns     Refreshes all DHCP leases and re-registers DNS names  
/displaydns     Display the contents of the DNS Resolver Cache.  
/showclassid    Displays all the dhcp class IDs allowed for adapter.  
/setclassid     Modifies the dhcp class id.  
/showclassid6  Displays all the IPv6 DHCP class IDs allowed for adapter.  
/setclassid6    Modifies the IPv6 DHCP class id.
```




```
c:\Users>tracert 8.8.8.8
```

```
Tracing route to dns.google [8.8.8.8]  
over a maximum of 30 hops:
```

1	<1 ms	<1 ms	<1 ms	192.168.0.1
2	<1 ms	<1 ms	1 ms	172.16.22.1
3	<1 ms	<1 ms	<1 ms	172.16.100.1
4	1 ms	1 ms	<1 ms	212.111.196.113
5	1 ms	1 ms	1 ms	google2-ix.giganet.ua [185.1.63.152]
6	1 ms	1 ms	1 ms	108.170.248.155
7	20 ms	14 ms	14 ms	142.251.242.35
8	15 ms	15 ms	15 ms	108.170.250.209
9	16 ms	15 ms	15 ms	108.170.234.103
10	14 ms	14 ms	20 ms	dns.google [8.8.8.8]

```
Trace complete.
```



```
c:\Users>cipher/?
Displays or alters the encryption of directories [files] on NTFS partitions.

CIPHER [/E | /D | /C]
        [/S:directory] [/B] [/H] [pathname [...]]

CIPHER /K [/ECC:256|384|521]

CIPHER /R:filename [/SMARTCARD] [/ECC:256|384|521]

CIPHER /P:filename.cer

CIPHER /U [/N]

CIPHER /W:directory

CIPHER /X[:efsfile] [filename]

CIPHER /Y

CIPHER /ADDUSER [/CERTHASH:hash | /CERTFILE:filename | /USER:username]
        [/S:directory] [/B] [/H] [pathname [...]]

CIPHER /FLUSHCACHE [/SERVER:servername]

CIPHER /REMOVEUSER /CERTHASH:hash
        [/S:directory] [/B] [/H] [pathname [...]]

CIPHER /REKEY [pathname [...]]
```



```
C:\WINDOWS\system32>sfc/?

Microsoft (R) Windows (R) Resource Checker Version 6.0
Copyright (C) Microsoft Corporation. All rights reserved.

Scans the integrity of all protected system files and replaces incorrect versions with
correct Microsoft versions.

SFC [/SCANNOW] [/VERIFYONLY] [/SCANFILE=<file>] [/VERIFYFILE=<file>]
    [/OFFWINDIR=<offline windows directory> /OFFBOOTDIR=<offline boot directory> [/OFFLOGFILE=<log file path>]]

/SCANNOW           Scans integrity of all protected system files and repairs files with
                   problems when possible.
/VERIFYONLY       Scans integrity of all protected system files. No repair operation is
                   performed.
/SCANFILE         Scans integrity of the referenced file, repairs file if problems are
                   identified. Specify full path <file>
/VERIFYFILE       Verifies the integrity of the file with full path <file>. No repair
                   operation is performed.
/OFFBOOTDIR       For offline repair, specify the location of the offline boot directory
/OFFWINDIR        For offline repair, specify the location of the offline windows directory
/OFFLOGFILE       For offline repair, optionally enable logging by specifying a log file path

e.g.

sfc /SCANNOW
sfc /VERIFYFILE=c:\windows\system32\kernel32.dll
sfc /SCANFILE=d:\windows\system32\kernel32.dll /OFFBOOTDIR=d:\ /OFFWINDIR=d:\windows
sfc /SCANFILE=d:\windows\system32\kernel32.dll /OFFBOOTDIR=d:\ /OFFWINDIR=d:\windows /OFFLOGFILE=c:\log.txt
sfc /VERIFYONLY
```



```
C:\WINDOWS\system32>Powercfg /L

Existing Power Schemes (* Active)
-----
Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e (Balanced) *
Power Scheme GUID: 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c (High performance)
Power Scheme GUID: a1841308-3541-4fab-bc81-f71556f20b4a (Power saver)

C:\WINDOWS\system32>Powercfg /Q
Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e (Balanced)
  GUID Alias: SCHEME_BALANCED
  Subgroup GUID: 0012ee47-9041-4b5d-9b77-535fba8b1442 (Hard disk)
    GUID Alias: SUB_DISK
    Power Setting GUID: 6738e2c4-e8a5-4a42-b16a-e040e769756e (Turn off hard disk after)
      GUID Alias: DISKIDLE
      Minimum Possible Setting: 0x00000000
      Maximum Possible Setting: 0xffffffff
      Possible Settings increment: 0x00000001
      Possible Settings units: Seconds
      Current AC Power Setting Index: 0x000004b0
      Current DC Power Setting Index: 0x00000258

  Subgroup GUID: 02f815b5-a5cf-4c84-bf20-649d1f75d3d8 (Internet Explorer)
    Power Setting GUID: 4c793e7d-a264-42e1-87d3-7a0d2f523ccd (JavaScript Timer Frequency)
      Possible Setting Index: 000
      Possible Setting Friendly Name: Maximum Power Savings
      Possible Setting Index: 001
      Possible Setting Friendly Name: Maximum Performance
      Current AC Power Setting Index: 0x00000001
      Current DC Power Setting Index: 0x00000000
```



```
C:\WINDOWS\system32>assoc .txt  
.txt=txtfile
```

```
C:\WINDOWS\system32>assoc .xls  
.xls=Excel.Sheet.8
```

```
C:\WINDOWS\system32>assoc .docx  
.docx=Word.Document.12
```

```
C:\WINDOWS\system32>assoc/?  
Displays or modifies file extension associations
```

```
ASSOC [.ext[=[fileType]]]
```

.ext	Specifies the file extension to associate the file type with
fileType	Specifies the file type to associate with the file extension

Type ASSOC without parameters to display the current file associations. If ASSOC is invoked with just a file extension, it displays the current file association for that file extension. Specify nothing for the file type and the command will delete the association for the file extension.



```
C:\WINDOWS\system32>tasklist/?
```

```
TASKLIST [/S system [/U username [/P [password]]]]  
        [/M [module] | /SVC | /V] [/FI filter] [/FO format] [/NH]
```

Description:

This tool displays a list of currently running processes on either a local or remote machine.

NOTE: "WINDOWTITLE" and "STATUS" filters are not supported when querying a remote machine.

Examples:

```
TASKLIST  
TASKLIST /M  
TASKLIST /V /FO CSV  
TASKLIST /SVC /FO LIST  
TASKLIST /APPS /FI "STATUS eq RUNNING"  
TASKLIST /M wbem*  
TASKLIST /S system /FO LIST  
TASKLIST /S system /U domain\username /FO CSV /NH  
TASKLIST /S system /U username /P password /FO TABLE /NH  
TASKLIST /FI "USERNAME ne NT AUTHORITY\SYSTEM" /FI "STATUS eq running"
```



```
C:\WINDOWS\system32>schtasks

Folder: \
TaskName                               Next Run Time                               Status
=====
GoogleUpdateTaskMachineCore{2A77F8CE-613  14.07.2022 09:31:57  Ready
GoogleUpdateTaskMachineUA{5D0CCB00-E464-  13.07.2022 13:31:57  Ready
MicrosoftEdgeUpdateTaskMachineCore      14.07.2022 01:09:27  Ready
MicrosoftEdgeUpdateTaskMachineCore1d71bc 14.07.2022 04:37:59  Ready
MicrosoftEdgeUpdateTaskMachineUA        13.07.2022 14:07:59  Ready
OneDrive Reporting Task-S-1-5-21-2697710  14.07.2022 01:27:48  Ready
OneDrive Standalone Update Task-S-1-5-21  14.07.2022 01:22:54  Ready
update-S-1-5-21-2697710687-3527258818-28 N/A          Disabled
update-sys                               N/A          Disabled

Folder: \Agent Activation Runtime
TaskName                               Next Run Time                               Status
=====
S-1-5-21-2697710687-3527258818-282189681 N/A          Disabled
```

```
schtasks /create /sc weekly /d FRI /tn "auto reboot computer
weekly" /st 23:00 /tr "shutdown -r -f -t 10"
schtasks /create /sc onstart /tn "launch Chrome on startup" /tr
"C:\Program Files (x86)\Google\Chrome\Application\Chrome.exe"
```



```
C:\WINDOWS\system32>format/?
Formats a disk for use with Windows.

FORMAT volume [/FS:file-system] [/V:label] [/Q] [/L[:state]] [/A:size] [/C] [/I:state]
FORMAT volume [/V:label] [/Q] [/F:size] [/P:passes]
FORMAT volume [/V:label] [/Q] [/T:tracks /N:sectors] [/P:passes]
FORMAT volume [/V:label] [/Q] [/P:passes]
FORMAT volume [/Q]

volume           Specifies the drive letter (followed by a colon),
                  mount point, or volume name.
/FS:filesystem   Specifies the type of the file system (FAT, FAT32, exFAT,
                  NTFS, UDF, ReFS).
/V:label         Specifies the volume label.
/Q              Performs a quick format. Note that this switch overrides /P.
/C              NTFS only: Files created on the new volume will be compressed
                  by default.
/X              Forces the volume to dismount first if necessary. All opened
                  handles to the volume would no longer be valid.
/R:revision      UDF only: Forces the format to a specific UDF version
                  (1.02, 1.50, 2.00, 2.01, 2.50). The default
```

```
format D: /Q /FS:exFAT /A:2048 /V:label
```




```
C:\WINDOWS\system32>Systeminfo /?
```

```
SYSTEMINFO [/S system [/U username [/P [password]]]] [/FO format] [/NH]
```

Description:

This tool displays operating system configuration information for a local or remote machine, including service pack levels.

Parameter List:

- | | | |
|-----|---------------|--|
| /S | system | Specifies the remote system to connect to. |
| /U | [domain\]user | Specifies the user context under which the command should execute. |
| /P | [password] | Specifies the password for the given user context. Prompts for input if omitted. |
| /FO | format | Specifies the format in which the output is to be displayed.
Valid values: "TABLE", "LIST", "CSV". |
| /NH | | Specifies that the "Column Header" should not be displayed in the output.
Valid only for "TABLE" and "CSV" formats. |
| /? | | Displays this help message. |



```
C:\WINDOWS\system32>Diskpart /?

Microsoft DiskPart version 10.0.19041.964

Copyright (C) Microsoft Corporation.
On computer: DESKTOP-4KQAKFR

Microsoft DiskPart syntax:
    diskpart [/s <script>] [/?]

    /s <script> - Use a DiskPart script.
    /?          - Show this help screen.
```

<https://www.digitalcitizen.life/command-prompt-advanced-disk-management-commands/#ftoc-heading-5>



PowerShell - це кросплатформне рішення для автоматизації завдань, яке включає оболонку командного рядка, скриптову мову та платформу керування конфігурацією. PowerShell підтримується у Windows, Linux та macOS.

Мова сценарію PowerShell зазвичай використовується для автоматизації процесів керування системами. Це рішення також часто використовується для створення, тестування та розгортання рішень у середовищах CI/CD (Continuous Integration/Continuous Delivery). В основі PowerShell лежить середовище CLR.NET (Common Language Runtime). Усі вхідні та вихідні дані є об'єктами .NET.

PowerShell Desired State Configuration (DSC)



```
PS C:\WINDOWS\system32> get-help Get-ExecutionPolicy
```

NAME

Get-ExecutionPolicy

SYNOPSIS

Gets the execution policies for the current session.

SYNTAX

```
Get-ExecutionPolicy [[-Scope] {CurrentUser | LocalMachine | MachinePolicy | Process
```

DESCRIPTION

To display the execution policies for each scope in the order of precedence, use `Ge

The effective execution policy is determined by execution policies that are set by `

For more information, see about_Execution_Policies (../Microsoft.PowerShell.Core/abo

RELATED LINKS

Online Version: <https://docs.microsoft.com/powershell/module/microsoft.powershell.se>

about_Execution_Policies

about_Group_Policy_Settings

Get-AuthenticodeSignature

Set-AuthenticodeSignature

Set-ExecutionPolicy

REMARKS

To see the examples, type: "get-help Get-ExecutionPolicy -examples".

For more information, type: "get-help Get-ExecutionPolicy -detailed".

For technical information, type: "get-help Get-ExecutionPolicy -full".

For online help, type: "get-help Get-ExecutionPolicy -online"



```
PS C:\WINDOWS\system32> get-help set-ExecutionPolicy

NAME
    Set-ExecutionPolicy

SYNOPSIS
    Sets the PowerShell execution policies for Windows computers.

SYNTAX
    Set-ExecutionPolicy [-ExecutionPolicy] {AllSigned | Bypass | Default | RemoteSigned |

DESCRIPTION
    The `Set-ExecutionPolicy` cmdlet changes PowerShell execution policies for Windows com

    An execution policy is part of the PowerShell security strategy. Execution policies de

    The `Set-ExecutionPolicy` cmdlet's default scope is LocalMachine , which affects every

    To display the execution policies for each scope in the order of precedence, use `Get-

RELATED LINKS
    Online Version: https://docs.microsoft.com/powershell/module/microsoft.powershell.sec
    about_Execution_Policies
    about_Group_Policy_Settings
    about_Providers
    Get-AuthenticodeSignature
    Get-ChildItem
    Get-ExecutionPolicy
    Invoke-Command
    Set-AuthenticodeSignature
    Unblock-File

REMARKS
    To see the examples, type: "get-help Set-ExecutionPolicy -examples".
    For more information, type: "get-help Set-ExecutionPolicy -detailed".
    For technical information, type: "get-help Set-ExecutionPolicy -full".
    For online help, type: "get-help Set-ExecutionPolicy -online"
```



```
PS C:\WINDOWS\system32> Get-ExecutionPolicy -list
```

Scope	ExecutionPolicy
MachinePolicy	Undefined
UserPolicy	Undefined
Process	Undefined
CurrentUser	Undefined
LocalMachine	Unrestricted

```
PS C:\WINDOWS\system32> Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope LocalMachine
```

Execution Policy Change

The execution policy helps protect you from scripts that you do not trust. Changing the execution policy may affect scripts that you have scheduled to run. Do you want to change the execution policy?

[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"): y

```
PS C:\WINDOWS\system32> Get-ExecutionPolicy -list
```

Scope	ExecutionPolicy
MachinePolicy	Undefined
UserPolicy	Undefined
Process	Undefined
CurrentUser	Undefined
LocalMachine	RemoteSigned



PowerShell

```
PS C:\WINDOWS\system32> Get-Process
```

Handles	NPM(K)	PM(K)	WS(K)	CPU(s)	Id	SI	ProcessName
410	44	32528	15636	20,483.05	580	0	aakore
494	41	13576	15052	608.78	3344	0	adp-agent
242	13	3572	2936	11.11	6272	0	afcdpsrv
564	39	58372	25500	289.94	1404	0	anti_ransomware_service
433	26	12216	24400	5.16	7876	2	ApplicationFrameHost
216	12	2900	15008	0.09	2700	2	backgroundTaskHost
513	24	6300	27984	0.23	8856	2	backgroundTaskHost
281	19	12644	12464	1,419.36	11296	0	bckp_amgr
527	28	27352	888	0.58	5632	2	Calculator
264	14	6844	16908	11.05	7412	2	conhost
162	10	6656	2548	7.13	11884	0	conhost
614	25	1868	2444	23.75	620	0	csrss
532	30	3156	3224	607.83	2944	2	csrss
1622	17	6244	12704	174.89	8064	2	ctfmon
538	20	7980	8916	9.06	4020	0	dasHost
241	17	3984	24264	0.41	10324	2	dllhost
4913	51	91624	37784	9,361.56	3472	2	dwm
5365	128	1605752	356404	1,548.69	8980	2	explorer
219	15	20128	17116	0.45	1168	2	firefox
298	20	26216	24240	0.16	2888	2	firefox
346	36	100984	60644	12.59	4196	2	firefox
297	18	31668	21984	0.41	7084	2	firefox
298	20	26148	24964	0.11	7128	2	firefox
298	20	26144	24056	0.13	7484	2	firefox
336	27	43252	55736	11.03	7616	2	firefox
340	26	40476	50920	6.95	8720	2	firefox
1686	114	239716	224224	907.50	9140	2	firefox



Handles: Кількість дескрипторів, які відкрив процес.

NPM(K): Обсяг невивантаженої пам'яті, яку використовує процес, у кілобайтах.

PM(K): Обсяг пам'яті, яку використовує процес, у кілобайтах.

WS(K): Розмір робочого набору процесу, в кілобайтах. Робочий набір складається зі сторінок пам'яті, на які нещодавно посилався процес.

VM(M): Обсяг віртуальної пам'яті, яку використовує процес, у мегабайтах. Віртуальна пам'ять включає зберігання у файлах підкачки на диску.

CPU(s): Кількість процесорного часу, використаного процесом на всіх процесорах, у секундах.

ID: ідентифікатор процесу (PID) процесу.

ID: ?

ProcessName: ?



```
PS C:\WINDOWS\system32> Get-Service
```

Status	Name	DisplayName
Running	aakore	Acronis Agent Core Service
Stopped	AarSvc_4151796	Agent Activation Runtime_4151796
Running	AcronisActivePr...	Acronis Active Protection (TM) Service
Stopped	AcronisCyberPro...	Acronis Cyber Protection Service
Running	AcrSch2Svc	Acronis Scheduler2 Service
Running	afcdpsrv	Acronis Nonstop Backup Service
Stopped	AJRouter	AllJoyn Router Service
Stopped	ALG	Application Layer Gateway Service
Stopped	AppIDSvc	Application Identity
Running	Appinfo	Application Information
Stopped	AppMgmt	Application Management
Stopped	AppReadiness	App Readiness
Stopped	AppVClient	Microsoft App-V Client
Running	AppXSvc	AppX Deployment Service (AppXSVC)
Stopped	AssignedAccessM...	AssignedAccessManager Service
Running	AudioEndpointBu...	Windows Audio Endpoint Builder
Running	Audiosrv	Windows Audio
Stopped	autotimesvc	Cellular Time
Stopped	AxInstSV	ActiveX Installer (AxInstSV)



```
PS C:\WINDOWS\system32> Get-Command
```

CommandType	Name	Version	Source
Alias	Add-AppPackage	2.0.1.0	Appx
Alias	Add-AppPackageVolume	2.0.1.0	Appx
Alias	Add-AppProvisionedPackage	3.0	DisM
Alias	Add-ProvisionedAppPackage	3.0	DisM
Alias	Add-ProvisionedAppxPackage	3.0	DisM
Alias	Add-ProvisioningPackage	3.0	Provisioning
Alias	Add-TrustedProvisioningCertificate	3.0	Provisioning
Alias	Apply-WindowsUnattend	3.0	DisM
Alias	Disable-PhysicalDiskIndication	2.0.0.0	Storage
Alias	Disable-StorageDiagnosticLog	2.0.0.0	Storage
Alias	Dismount-AppPackageVolume	2.0.1.0	Appx
Alias	Enable-PhysicalDiskIndication	2.0.0.0	Storage
Alias	Enable-StorageDiagnosticLog	2.0.0.0	Storage
Alias	Export-VMCheckpoint	2.0.0.0	Hyper-V
Alias	Flush-Volume	2.0.0.0	Storage
Alias	Get-AppPackage	2.0.1.0	Appx
Alias	Get-AppPackageDefaultVolume	2.0.1.0	Appx
Alias	Get-AppPackageLastError	2.0.1.0	Appx
Alias	Get-AppPackageLog	2.0.1.0	Appx
Alias	Get-AppPackageManifest	2.0.1.0	Appx
Alias	Get-AppPackageVolume	2.0.1.0	Appx
Alias	Get-AppProvisionedPackage	3.0	DisM
Alias	Get-DiskSNV	2.0.0.0	Storage
Alias	Get-PhysicalDiskSNV	2.0.0.0	Storage



```
PS C:\WINDOWS\system32> Get-Command -Noun Process
```

CommandType	Name	Version	Source
-----	----	-----	-----
Cmdlet	Debug-Process	3.1.0.0	Microsoft.PowerShell.Management
Cmdlet	Get-Process	3.1.0.0	Microsoft.PowerShell.Management
Cmdlet	Start-Process	3.1.0.0	Microsoft.PowerShell.Management
Cmdlet	Stop-Process	3.1.0.0	Microsoft.PowerShell.Management
Cmdlet	Wait-Process	3.1.0.0	Microsoft.PowerShell.Management

```
PS C:\WINDOWS\system32> Get-Command -Noun Disk
```

CommandType	Name	Version	Source
-----	----	-----	-----
Function	Clear-Disk	2.0.0.0	Storage
Function	Get-Disk	2.0.0.0	Storage
Function	Initialize-Disk	2.0.0.0	Storage
Function	Set-Disk	2.0.0.0	Storage
Function	Update-Disk	2.0.0.0	Storage

```
PS C:\WINDOWS\system32> Get-Command -Noun File
```

CommandType	Name	Version	Source
-----	----	-----	-----
Cmdlet	Out-File	3.1.0.0	Microsoft.PowerShell.Utility
Cmdlet	Unblock-File	3.1.0.0	Microsoft.PowerShell.Utility



```
PS C:\WINDOWS\system32> Get-Service -Name w32time | Get-Member
```

```
TypeName: System.ServiceProcess.ServiceController
```

Name	MemberType	Definition
Name	AliasProperty	Name = ServiceName
RequiredServices	AliasProperty	RequiredServices = ServicesDependedOn
Disposed	Event	System.EventHandler Disposed(System.Object, System.EventArgs)
Close	Method	void Close()
Continue	Method	void Continue()
CreateObjRef	Method	System.Runtime.Remoting.ObjRef CreateObjRef(type requestedType)
Dispose	Method	void Dispose(), void IDisposable.Dispose()
Equals	Method	bool Equals(System.Object obj)
ExecuteCommand	Method	void ExecuteCommand(int command)
GetHashCode	Method	int GetHashCode()
GetLifetimeService	Method	System.Object GetLifetimeService()
GetType	Method	type GetType()
InitializelifetimeService	Method	System.Object InitializelifetimeService()
Pause	Method	void Pause()
Refresh	Method	void Refresh()
Start	Method	void Start(), void Start(string[] args)
Stop	Method	void Stop()
WaitForStatus	Method	void WaitForStatus(System.ServiceProcess.ServiceControllerStatus desiredStatus),
CanPauseAndContinue	Property	bool CanPauseAndContinue {get;}
CanShutdown	Property	bool CanShutdown {get;}
CanStop	Property	bool CanStop {get;}
Container	Property	System.ComponentModel.IContainer Container {get;}
DependentServices	Property	System.ServiceProcess.ServiceController[] DependentServices {get;}
DisplayName	Property	string DisplayName {get;set;}
MachineName	Property	string MachineName {get;set;}
ServiceHandle	Property	System.Runtime.InteropServices.SafeHandle ServiceHandle {get;}
ServiceName	Property	string ServiceName {get;set;}
ServicesDependedOn	Property	System.ServiceProcess.ServiceController[] ServicesDependedOn {get;}
ServiceType	Property	System.ServiceProcess.ServiceType ServiceType {get;}
Site	Property	System.ComponentModel.ISite Site {get;set;}
StartType	Property	System.ServiceProcess.ServiceStartMode StartType {get;}
Status	Property	System.ServiceProcess.ServiceControllerStatus Status {get;}
ToString	ScriptMethod	System.Object ToString();



```
PS C:\WINDOWS\system32> Get-Command -ParameterType ServiceController

CommandType      Name                               Version      Source
-----
Cmdlet           Get-Service                       3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Restart-Service                   3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Resume-Service                    3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Set-Service                       3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Start-Service                     3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Stop-Service                      3.1.0.0     Microsoft.PowerShell.Management
Cmdlet           Suspend-Service                  3.1.0.0     Microsoft.PowerShell.Management
```

```
PS C:\WINDOWS\system32> Get-Service -Name w32time | Select-Object -Property *

Name                : w32time
RequiredServices    : {}
CanPauseAndContinue : False
CanShutdown         : True
CanStop             : True
DisplayName          : Windows Time
DependentServices   : {}
MachineName         : .
ServiceName         : w32time
ServicesDependedOn  : {}
ServiceHandle       : SafeServiceHandle
Status              : Running
ServiceType         : Win32OwnProcess, Win32ShareProcess
StartType           : Automatic
Site                :
Container           :
```



```
PS C:\WINDOWS\system32> Get-Service -Name w32time | Select-Object -Property Status, Name, DisplayName, ServiceType

Status Name      DisplayName      ServiceType
-----
Running w32time Windows Time Win32OwnProcess, Win32ShareProcess
```

```
PS C:\WINDOWS\system32> Get-Service -Name w32time | Select-Object -Property Status, DisplayName, Can*

Status           : Running
DisplayName       : Windows Time
CanPauseAndContinue : False
CanShutdown      : True
CanStop          : True
```

```
PS C:\WINDOWS\system32> Get-Service -Name w32time | Get-Member -MemberType Method
```

```
TypeName: System.ServiceProcess.ServiceController

Name      MemberType Definition
-----
Close     Method      void Close()
Continue  Method      void Continue()
CreateObjRef Method      System.Runtime.Remoting.ObjRef CreateObjRef(type requestedType)
Dispose   Method      void Dispose(), void IDisposable.Dispose()
Equals    Method      bool Equals(System.Object obj)
ExecuteCommand Method     void ExecuteCommand(int command)
GetHashCode Method     int GetHashCode()
GetLifetimeService Method     System.Object GetLifetimeService()
GetType   Method      type GetType()
InitializeLifetimeService Method     System.Object InitializeLifetimeService()
Pause     Method      void Pause()
Refresh   Method      void Refresh()
Start     Method      void Start(), void Start(string[] args)
Stop      Method      void Stop()
```



```
PS C:\WINDOWS\system32> (Get-Service -Name w32time).Stop()
PS C:\WINDOWS\system32> Get-Service -Name w32time

Status      Name                DisplayName
-----      -
Stopped     w32time             Windows Time

PS C:\WINDOWS\system32> Get-Service -Name w32time | Start-Service -PassThru

Status      Name                DisplayName
-----      -
Running     w32time             Windows Time

PS C:\WINDOWS\system32> Get-Service -Name w32time

Status      Name                DisplayName
-----      -
Running     w32time             Windows Time
```



```
Get-CimInstance -ClassName Win32_BIOS
```

```
Get-CimInstance -ClassName Win32_Processor | Select-Object  
-ExcludeProperty "CIM*"
```

```
Get-CimInstance -ClassName Win32_LogonSession
```

```
Get-CimInstance -Class Win32_NetworkAdapterConfiguration  
-Filter IPEnabled=$true |  
    Select-Object -ExpandProperty IPAddress
```

```
Get-CimInstance -Class Win32_NetworkAdapterConfiguration  
-Filter IPEnabled=$true
```




```
$source="D:\your_directory"  
Get-ChildItem $source -recurse -force | where {$_.psiscontainer}  
| foreach {  
    $count = Get-ChildItem $_.fullname -recurse | where  
{$_.length} | Measure-Object -property length -Sum  
    Write-Host($_.FullName)  
    $FileSize = '{0:F}' -f ((($count.Sum)/1024)/1024)  
    Write-Host("Files: " + $count.count )  
    Write-Host("Size: " + $FileSize + " MB")  
    "" + $_.FullName + ", " + $count.count + ", " + $FileSize + "" |  
Out-File D:\CountFiles.csv -Append  
}
```

ВІЙСЬКОВИЙ ІНСТИТУТ ТЕЛЕКОМУНІКАЦІЙ ТА ІНФОРМАТИЗАЦІЇ
імені ГЕРОЇВ КРУТ



**ДЯКУЮ
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