

# **Docusnap X - WMI Access Problems** Analysis and Troubleshooting



TITLE	Docusnap X - WMI Access Problems
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DATE	12/18/2018
VERSION	1.2   valid from September 26, 2018

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#### 1. Introduction

For the inventory of Windows systems, Docusnap uses the standard Windows Management Instrumentation (WMI) interface.

If problems occur during an inventory scan of a Windows system, the WMI connection to a host can be tested using one of the following tools:

- WBEMTest.exe
- Computer Management
- WMI Diagnosis Utility

### 2. WBEMTest

The WBEMTest.exe file is available on every computer where WMI is installed. Since Windows 2000, WMI is part of the operating system.

The following example shows how to establish a remote WMI connection to a host called *wknc2006*.

The DNS name of the domain is *docusnap.intern*. The NETBIOS name of the domain is *docusnap*.

Open the Windows Run dialog (Windows key + R) and type wbemtest.

Windows Ma	nagement Instru	imentation Teste	er 🗕 🗆 🗙
Namespace:			Connect Exit
IWbemServices	0		
Enum Classes	Enum Instances	Open <u>N</u> amespace	Edit Context
<u>C</u> reate Class	Create Instance	Query	Cre <u>a</u> te Refresher
Open Class	Open Instance	Notification Query	
<u>D</u> elete Class	Delete Instance	Execute Method	
Method Invocation C	Options		1
C Asynchronous			leges
<ul> <li>Synchronous</li> </ul>		Use Amended	Qualmers
Semisynchrono	DUS	Direct Access	on Read Operations
🔲 Use NextA:	sync (enum. only)		
10 Batch	Count (enum, only)	5000 Timeout	(msec., -1 for infinite)

Fig. 1 - Connect



Co	onnect	
Namoapago	_	Connect
\\wknc2006.docusnap.intem\roo	t∖cimv2	Cancel
Connection:		
Using: IWbemLocator (Name	spaces)	•
Returning: IWbemServices	Completion:	Synchronous 💌
Uredentials User: docusnap\administrat	tor	
Authority:		
Locale	<u>How to interpret</u>	empty password —
	NULL	C Blank
Impersonation level	- Authentication le	e <u>v</u> el
C Identify	C None	Packet
-	C Connection	C Packet integrity
<ul> <li>Impersonate</li> </ul>	Connection	

Fig. 2 - Target system and user

For a remote connection, enter the fully qualified hostname and the default root\cimv2 namespace in the "Namespace" field. In our example, this is \\wknc2006.docusnap.intern\root\cimv2.

In the "Credentials" group box, enter the user name and the password of the user who scans the system from within Docusnap. Precede the user name with the appropriate domain name.

When you click the "Connect" button, the WMI connection to the remote system is established. If not, an error message appears.



Windows Management Instrumentation Tester – 🗆 🗙				
Namespace	Namespace:     Connect       \\wknc2006.docusnap.intern\root\cimv2     Exit			
- IWbem Serv	ices —			
Enum Clas	sses	Enum <u>I</u> nstances	Open <u>N</u> amespace	Edit Context
<u>C</u> reate Cl	ass	C <u>r</u> eate Instance	Query	Cre <u>a</u> te Refresher
Open (		Su	perclass Info	
Delete ( Method In C Asyr	Ente	r superclass name		OK Cancel
C Sync	,			
Semi	• I	mmediate only		
Πι	O F	Recursive		
10	batonic	oune (onum: only)	10000 1111000	инасс., ттог и иницер

Fig. 3 - Successful connection to the WMI remote host

Click "Enum Classes" and then "OK" to display an overview of the WMI top-level classes.

You can also start a "Query" – e.g. select \* from Win32\_Products

Query Result		
Top-level classes	Close	
136 objects max. batch: 10 Done		
NotifyStatus       0        PARAMETERS       0        SecurityRelatedClass       0        SystemClass       0        SystemSecurity       0         CIM_Action       0         CIM_ActionSequence       0         CIM_ActsAsSpare       0         CIM_AdjacentSlots       0         CIM_Check       0         CIM_CollectedCollections       0         CIM_CollectedMSEs       0		~
<u>A</u> dd <u>D</u> elete		





# 3. Computer Management

A remote WMI connection to a WMI repository can also be established via the Windows Computer Management feature. Here, however, it is not possible to specify a different user.

<b>*</b>		Computer Management	_ 🗆 🗙
File Action	View Help		
Comp	Connect to another computer		Actions
⊿ ( <u>*</u> 3y	All Tasks	-	Computer Manageme 🔺
	View	ations	More Actions
▷ 33.	Evport List		
⊳ 🚳		-	
🔺 🔄 Storage	e II	]	
📄 Dis	k Management		
D D D DEVICE			
<	>		

#### Fig. 5 - Computer Management (compmgmt.msc)



<b>a</b>	Computer Management	- 🗆 ×
File Action View Help		
🗢 🄿 🞽 🖬 🗐 🛛 🖬		
Computer Management (WKN		Actions
System Tools Storage	Windows Management Instrumentation (WMI)	WMI Control
Services and Applications	Configures and controls the Windows Management Instrumentation (WMI) service.	More Actions
Services		
W View		
Properties		
Help	-	
< >>		

Fig. 6 - WMI Control – Properties

General       Backup/Restore       Security       Advanced         Image: Successfully Connected to: \\WKNC2006       Successfully Connected to: \\WKNC2006         Processor : Intel(R) Xeon(R) CPU       X5650 @ 2.67GHz         Operating System : Microsoft Windows 8.1 Enterprise         OS Version : 6.3.9600         Service Pack : 0.0         WMI Version : 9600.16384         WMI location : C:\Windows\system32\wbem	WMI Control Properties ? ×
This dialog allows you to get general information about the computer. Successfully Connected to: \\WKNC2006 Processor : Intel(R) Xeon(R) CPU X5650 @ 2.67GHz Operating System : Microsoft Windows 8.1 Enterprise OS Version : 6.3.9600 Service Pack : 0.0 WMI Version : 9600.16384 WMI location : C:\Windows\system32\wbem	General Backup/Restore Security Advanced
Successfully Connected to: \\WKNC2006 Processor : Intel(R) Xeon(R) CPU X5650 @ 2.67GHz Operating System : Microsoft Windows 8.1 Enterprise OS Version : 6.3.9600 Service Pack : 0.0 WMI Version : 9600.16384 WMI location : C:\Windows\system32\wbem	This dialog allows you to get general information about the computer.
Processor : Intel(R) Xeon(R) CPU X5650 @ 2.67GHz Operating System : Microsoft Windows 8.1 Enterprise OS Version : 6.3.9600 Service Pack : 0.0 WMI Version : 9600.16384 WMI location : C:\Windows\system32\wbem	Successfully Connected to: \\WKNC2006
	Operating System : Microsoft Windows 8.1 Enterprise OS Version : 6.3.9600 Service Pack : 0.0 WMI Version : 9600.16384 WMI location : C:\Windows\system32\wbem
OK Cancel Apply	OK Canad Arabi

Fig. 7 - Connection successfully established



### 4. WMI Diagnosis Utility

The WMI Diagnosis Utility allows you to diagnose and, if necessary, repair the WMI service using a script. The WMI Diagnosis Utility can be used for the following operating systems:

- Windows Vista, 7, 8, 8.1
- Windows Server 2003, 2008, 2008 R2, 2012, 2012 R2

Download it from the Microsoft website.



### 5. Troubleshooting

If errors occur during Remote WMI queries with the mentioned tools, Docusnap will not be able to successfully inventory the host via WMI.

In this case, please check the following:

• Sufficient user permissions? (the local administrator or domain administrator account)

For testing, always use the very user who will also perform the inventory scan in Docusnap. To do so, either log in with that user account, or run the tools under a different user account (hold down the left Shift key when right-clicking to open the context menu of a program or a shortcut, e.g. on the Desktop).

• Windows Firewall enabled? Have the required Windows Firewall exceptions been set?

For the required firewall exceptions, please refer to: https://media.docusnap.com/media/doc/howto/DocusnapX\_WMIAccessProblems.pdf

• Unambiguous host name resolution

Forward lookup and reverse lookup zones must be maintained on the DNS server.

Open the command prompt (cmd.exe) to check the name resolution by entering the following commands:

Forward lookup: nslookup wknc2007.docusnap.intern Reverse lookup: nslookup 192.168.103.34

No error may be returned by either name resolution method.

#### • Have the required Windows services been started?

Required services
Windows Management Instrumentation
Remote Procedure Call (RPC)

#### Fig. 8 - Overview of services



#### • Checking the integrity of the WMI repository on the host

You can use the integrated "winmgmt /verifyrepository" command to check the integrity of the WMI repository on the host. This command must be run on the system to be scanned.

#### 6. Alternative inventory method

Besides the classic network inventory process, Docusnap offers an alternative inventory method for devices which are never or only sporadically connected to the network (e.g. laptop computers of field staff). This method can also be used if e.g. permission issues in the WMI context can only be resolved with considerable effort or not at all.

For such scenarios, we recommend to use the DocusnapScript.exe file which is stored in the *Tools* folder of the Docusnap application directory.

Each time DocusnapScript.exe is called, an XML file with a unique name and timestamp (snapshot) is generated. This file contains all inventory data of the system. Later, these xml files can be imported into Docusnap either manually or using an automated process.

An advantage of this alternative inventory method is that the execution of DocusnapScript.exe does not require admin rights on the respective system – normal user rights are sufficient.

The following example shows how to inventory the system where DocusnapScript.exe runs with debug level 2. The xml file will be stored under C:\temp.

Example:

DocusnapScript.exe -L 2 -O C:\temp

As the target for storing the file, you can of course also select a central filing location.



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# **VERSION HISTORY**

Date	Description
01/03/2017	How-To creation
24/10/2018	Modified layout

