Getac

Getac BIOS Configuration with Windows Management Instrumentation for Raptor Lake Platform

Rev 1.02

Jul 01, 2024

Revision History

Rev	Date	Description
R1.00	2023/10/17	First version 1. Modify 2.4.2 Item table & Appendix A-1.Models Mapping Table. 2. Add B360G2 project WMI record.
R1.01	2024/05/27	Change Asset Tag field to Advanced page. Revised wording and format for p5~9, 12, 15~22
R1.02	2024/07/01	Modify 2.4.2 Item table & Appendix A-1. Models Mapping Table.

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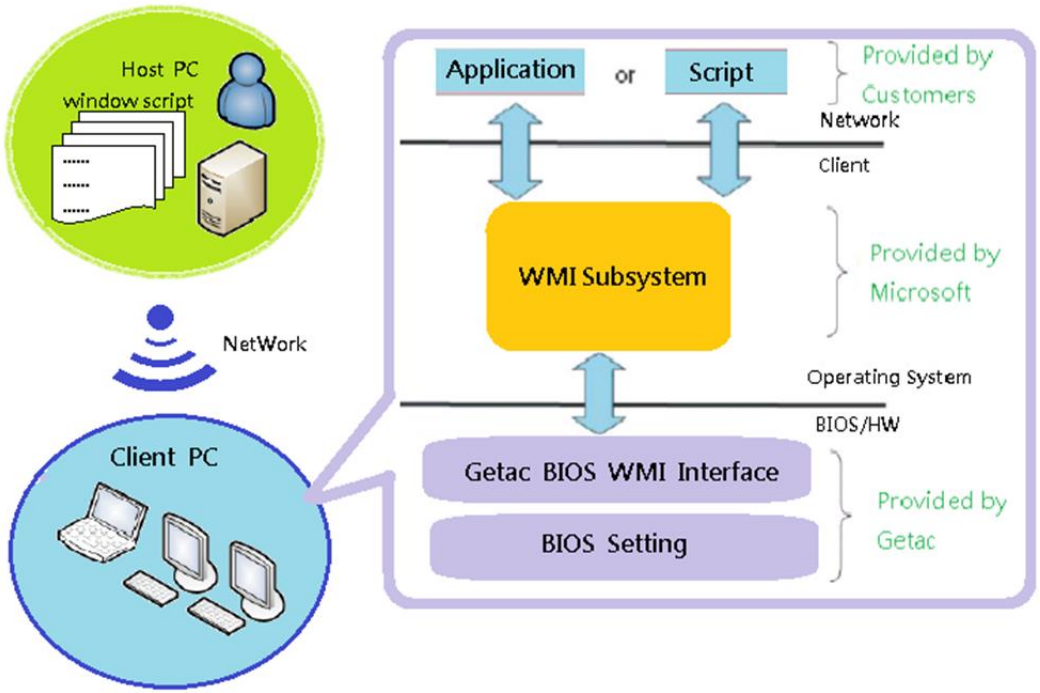
Chapter 1.Introduction

This chapter will introduce the Getac WMI and provide users with an overview.

1.1. Overview

Most of Windows® operating systems provide Windows Management Instrumentation (WMI), providing users with the information of local or remote PCs. Getac BIOS WMI interface receives the instruction from Operating system and access the BIOS settings. IT administrator can query and set all the BIOS settings (except read only items), recover the BIOS to factory settings, set and change passwords, and modify the boot order in remote PCs.



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1.2. Disclaimer

BIOS settings are related to the WMI instruction and the computer device. Getac assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the computers' BIOS and the manual.

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Chapter 2.Getac WMI Interface

In this chapter, details of how to operate the Getac WMI Interface to access the BIOS settings in remote PCs are illustrated.

2.1. Configure the BIOS Settings

The following interface accesses the Getac BIOS settings.

Namespace: “\root\WMI”

2.2. Query BIOS User Password Status

Users can check if the password is registered in this class.

Class name/Method name: Query_GetacBIOSPassWord

Type: Method
Example: “SUVPW”
Item table:

Page	Item	WMI Item	Attr.
Security	Set Supervisor password	**SUVPW**	R
	Set User password	**USERPW**	R

Return value: “Registered”, “Null”, “Not support”

2.3.Set BIOS User Password

Supervisor Password and User Password are set in this class. If users want to set User Password, the Supervisor Password must be set first.

If the Supervisor Password is clear, then the User Password will be clear as well.

Class name/Method name: Set_GetacBIOSPassWord
Type: Method
Example: “SUVPW,1e234,AB4567”

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Item table:

Page	Item	WMI Item	Attr.	Current PW	New PW
Security	Set Supervisor password	**SUVPW**	W	*note1	*note2/3
	Set User password	**USERPW**	W	*note1	*note2/3

*note1: If the password is not registered, the blank is set to Current PW for password setting.
*note2: If the blank is set to New PW, the current password will be deleted.
*note3: By default, the maximum length of a password is **10**. For models supporting "StrongPassword", the maximum length of a password can be up to **64** and the minimum length as **4**.

Return value: "Success", "Fail", "Not support"

Note：If the WMI item is not provided, the return value will be "Not support"

2.4.Switch to the BIOS Configure Mode

Regarding BIOS security, users must switch to the BIOS configure mode before accessing the Getac WMI Interface. If Getac WMI interface receives wrong Supervisor Password 3 times, Getac WMI interface will lock down due to security reasons. If the Getac WMI interface is locked, any access will return "Locked". Users can enter BIOS setup utility to unlock.

Class name/Method name: Set_GetacBIOSConfigMode
Type: Method
Example: "1234,SetStart" (if Supervisor password [SUVPW] is 1234.)
Item table:

WMI Item	Description
SUVPW	Supervisor password(*note1)
SetStart	Start of the access mode of BIOS when the supervisor is registered.
SetEnd	End of the access mode of BIOS.

*note1: By default, the maximum length of a password is **10**. For models supporting "StrongPassword", the maximum length of a password can be up to **64** and the minimum length as **4**.

Return value: "Success", "Fail", "Not support", "Locked"

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2.4.1.Load the default BIOS settings

This class name can recover BIOS to default settings.

Class name: Load_GetacDefaultSettings
Type: Method
Return value: “Success”, “Fail”, “Locked”

Note: As security-related options, the password is not recovered even if “load default” is requested.

2.4.2.Query/Change the Getac BIOS Settings

This section contains details on the WMI implementation for Query/Change Getac BIOS settings.

The queries can be used to retrieve setting values currently set.

Class name/Method name: Query_GetacBIOSSettings
Type: Method
Example: “OSSelect”
Note: If the Query item is not provided, the return value will be “Not support”

To change/set the BIOS settings,
Class name/Method name: Set_GetacBIOSSettings
Type: Method
Example1: “LegacyUSBSupport,Enabled”
Example2: “BootTypeOrder, HardDisk, USBDisk,USBFloppy ,Network,USBCD”
Return value: “Success”, “Fail”, “Locked”,“Not Support”

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Item table:

Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues
Information	EC Version	**ECVersion**	R	**R1.00.070520**
	Virtual MAC Address **(*Note1)**	**VirtualMAC**	R	**XX-XX-XX-XX-XX-XX**
Main	Internal Numlock	**InternalNumlock**	R/W	**“Disabled”,”Enabled”**
	FN and Ctrl Key Placement	**FNCtrlKeyPlacement**	R/W	**“CtrlFN”,” FNCtrl”**
	WMI Version	**WMIVersion**	R	**“0.00”-“9.99”**
Advanced	Wake Up Capability	**HomeButtonWakeup**	R/W	**“Disabled”, ”Enabled”**
	Power Button Delay	**PowerButtonDelay**	R/W	**“NoDelay”, ”1sec”, ”2sec”**
	AC Initiation	**ACInitiation**	R/W	**“Disabled”, ”Enabled”**
	Magnetic Sensor	**MagneticSensor**	R/W	**”Enabled”, “Disabled”**
	USB Power-off Charging	**USBPowerOffCharging**	R/W	**“Disabled”, ”Enabled”**
	Screen Tapping for Boot Options	**ScreenTappingforBootOp**	R/W	**“Disabled”, ”Enabled”**
	MAC Address Pass Through	**MACAddressPassThrough**	R/W	**“Disabled”, ”Enabled”**
	Secondary Boot Block Backup	**SBBBackup**	R/W	**“Disabled”, ”Enabled”**
	Active Management Tech. Support **(*Note2)**	**IntelAMTSupport**	R/W	**“Disabled”, ”Enabled”**
		IntelAMTSetupPrompt	R/W	**“Disabled”, ”Enabled”**
		IntelAMTUSBProvision	R/W	**“Disabled”, ”Enabled”**
	Virtualization Tech.	**IntelVT**	R/W	**“Disabled”, ”Enabled”**
		VTd	R/W	**“Disabled”, ”Enabled”**

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Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues
	Device Configuration	**WirelessLAN**	R/W	**“Disabled”, ”Enabled”**
		WWAN	R/W	**“Disabled”, ”Enabled”**
		Bluetooth	R/W	**“Disabled”, ”Enabled”**
		MediaCardReader	R/W	**“Disabled”, ”Enabled”**
		SmartCardReader	R/W	**“Disabled”, ”Enabled”**
		RFID	R/W	**“Disabled”, ”Enabled”**
		FingerprintScanner	R/W	**“Disabled”, ”Enabled”**
		FrontWebcam	R/W	**“Disabled”, ”Enabled”**
		RearCamera	R/W	**“Disabled”, ”Enabled”**
		BarcodePM	R/W	**“PowerSaving”, ”QuickStart”**
		Thunderbolt	R/W	**“Disabled”, ”Enabled”**
		SystemUSBPort	R/W	**“Disabled”, ”Enabled”**
		DockingUSBPortSetting	R/W	**“USB2.0”, “USB3.0”**
		InternalMicrophone	R/W	**“Disabled”, ”Enabled”**
		InternalSpeaker	R/W	**“Disabled”, ”Enabled”**
	Asset Tag	**AssetTag**	R/W	**32 characters maximum**
Security	StrongPassword	**StrongPassword**	R/W	**“Disabled”, ”Enabled”**
	Password on Boot	**PasswordonBoot**	R/W	**“Disabled”, ”Enabled”**
	PasswordConfig	**PasswordConfig**	R/W	**“04”-“64”**
	Secure Boot Configuration **(*Note3)**	**LoadMSFTUEFICA**	R/W	**“Disabled”, ”Enabled”**
	Security Freeze Lock	**SecurityFreezeLock**	R/W	**“Disabled”, ”Enabled”**
	Intel Trusted Execution Technology	**IntelTrustedExeTech**	R/W	**“Disabled”, ”Enabled”**

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Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues
	(*Note2)			
Boot	Boot Type Order **(*Note4)**	**BootTypeOrder**	R/W	**“HardDisk”, ”USBDisk”, “USBCD”, “Network”, ”CDROM”**
	Boot Device	**HardDiskDrive**	R/W	**“Off”, ”On”**
		USBDiskDrive	R/W	**“Off”, ”On”**
		USBCDDVDDrive	R/W	**“Off”, ”On”**
		NetworkDrive	R/W	**“Off”, ”On”**
		CDDVDDrive	R/W	**“Off”, ”On”**
	Fast Boot	**FastBoot**	R/W	**“Disabled”, ”Enabled”**
	Alternative WBM option	**AlternativeWBM**	R/W	**“Disabled”, ”Enabled”**

*Note1: It will return virtual MAC address when there is no physical network card in this system.
*Note2: Only AMT SKU systems are supported.
*Note3: Supervisor password is needed. Otherwise, system will return value as “fail”.
“Disable” option won’t delete MSFT CA Key.
To delete it, please restore to Factory Defaults manually.
Disable bitlocker function before executing LoadMSFTUEFICA. Otherwise, input bitlocker recovery key will be required after LoadMSFTUEFICA.
*Note4:

“BootTypeOrder” Individual model return/accept values case	
S410G5	**Others**
“HardDisk”, **“USBDisk”,** **“Network”,** **“USBCD”,** **“CDROM”**	**“HardDisk”,** **“USBDisk”,** **“Network”,** **“USBCD”**

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O = Support
X = Not Support

Appendix A-1.Models Mapping Table

Page	Item	WMI Item/ Return Item	Attr.	S410G5	B360G2	F110G7		
Information	EC Version	**ECVersion**	R	O	O	O		
	Virtual MAC Address	**VirtualMAC**	R	X	X	X		
Main	Internal Numlock	**InternalNumlock**	R/W	O	O	X		
	FN and Ctrl Key Placement	**FNCtrlKeyPlacement**	R/W	O	O	O		
	WMI Version	**WMIVersion**	R	O	O	O		
Advanced	WakeUp Capability	**HomeButtonWakeup**	R/W	X	X	O		
	Power Button Delay	**PowerButtonDelay**	R/W	O	O	O		
	AC Initiation	**ACInitiation**	R/W	O	O	O		
	Magnetic Sensor	**MagneticSensor**	R/W	O	O	O		
	USB Power-off Charging	**USBPowerOffCharging**	R/W	O	O	O		
	Screen Tapping for Boot Options	**ScreenTappingforBootOp**	R/W	X	X	O		
	MAC Address Pass Through	**MACAddressPassThrough**	R/W	O	O	O		
	Secondary Boot Block Backup	**SBBBackup**	R/W	O	X	O		
	Active Management Tech. Support	**IntelAMTSupport**	R/W	O	O	O		
		IntelAMTSetupPrompt	R/W	O	O	O		
		IntelAMTUSBProvision	R/W	O	O	O		
	Virtualization Tech. Setup	**IntelVT**	R/W	O	O	O		
		VTd	R/W	O	O	O		
	Device Configuration	**WirelessLAN**	R/W	O	O	O		
		WWAN	R/W	O	O	O		
		Bluetooth	R/W	O	O	O		
		MediaCardReader	R/W	O	O	O		
		SmartCardReader	R/W	O	O	O		
		RFID	R/W	O	O	O		
		FingerprintScanner	R/W	O	O	O		
		FrontWebcam	R/W	O	O	O		
		RearCamera	R/W	X	X	O		

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Page	Item	WMI Item/ Return Item	Attr.	S410G5	B360G2	F110G7		
		BarcodePM	R/W	O	O	O		
		Thunderbolt	R/W	O	O	O		
		SystemUSBPort	R/W	O	O	O		
		DockingUSBPortSetting	R/W	O	O	O		
		InternalMicrophone	R/W	O	O	O		
		InternalSpeaker	R/W	O	O	O		
		SerialPort	R/W	X	X	O		
	Asset Tag	**AssetTag**	R/W	O	O	O		
Security	Password on Boot	**PasswordonBoot**	R/W	O	O	O		
	StrongPassword	**StrongPassword**	R/W	O	O	O		
	PasswordConfig	**PasswordConfig**	R/W	O	O	O		
	Secure Boot Configuration	**LoadMSFTUEFICA**	R/W	O	O	O		
	SecurityFreezeLock	**SecurityFreezeLock**	R/W	O	O	X		
	Intel Trusted Execution Technology	**IntelTrustedExeTech**	R/W	O	O	O		
Boot	Boot Type Order	**BootTypeOrder**	R/W	O	O	O		
	Boot Device	**HardDiskDrive**	R/W	O	O	O		
		USBDiskDrive	R/W	O	O	O		
		USBCDDVDDrive	R/W	O	O	O		
		NetworkDrive	R/W	O	O	O		
		CDDVDDrive	R/W	O	O	X		
	Fast Boot	**FastBoot**	R/W	O	O	O		
	Alternative WBM option	**AlternativeWBM**	R/W	O	O	O		

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Appendix B.VB Script to set the supervisor password

Users can set the Supervisor Password with below VB Script when the Supervisor Password is not registered and “1” is set.

```
strComputer = "."
Set objWMIService = GetObject("winmgmts:\\" &strComputer& "\root\WMI")

'------------------------------------------------------------------------------------------------------------
' Obtain an instance of the class
' using a key property value.
'------------------------------------------------------------------------------------------------------------
Set objShare = objWMIService.Get("Set_GetacBIOSPassWord.InstanceName='ACPI\PNP0C14\0_0'")

'------------------------------------------------------------------------------------------------------------
' Obtain an InParameters object specific to the method.
'------------------------------------------------------------------------------------------------------------
Set objInParam = objShare.Methods_("Set_GetacBIOSPassWord").inParameters.SpawnInstance_()

'------------------------------------------------------------------------------------------------------------
' Add the input parameters.
'------------------------------------------------------------------------------------------------------------
objInParam.Properties_.Item("DataIn") =    "SUVPW,,1"

'------------------------------------------------------------------------------------------------------------
‘Execute the method and obtain the return status.
' TheOutParameters object in objOutParamsis created by the provider.
'------------------------------------------------------------------------------------------------------------
Set objOutParams = objWMIService.ExecMethod("Set_GetacBIOSPassWord.InstanceName='ACPI\PNP0C14\0_0'",
"Set_GetacBIOSPassWord", objInParam)

'------------------------------------------------------------------------------------------------------------
' ListOutParams
'------------------------------------------------------------------------------------------------------------
Wscript.Echo "Out Parameters: "&objInParam.Properties_.Item("DataIn")
Wscript.echo "DataOut: " &objOutParams.DataOut
```


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Appendix C.VB Script to Query the OS Select

Users can query OS select with below VBScript.

```
strComputer = "."
Set objWMIService = GetObject("winmgmts:\\" &strComputer& "\root\WMI")

'--------------------------------------------------------------------------------------------------
' Obtain an instance of the class
' using a key property value.
'--------------------------------------------------------------------------------------------------

Set objShare = objWMIService.Get("Query_GetacBIOSSettings.InstanceName='ACPI\PNP0C14\0_0'")

'--------------------------------------------------------------------------------------------------
' Obtain an InParameters object specificto the method.
'--------------------------------------------------------------------------------------------------
Set objInParam = objShare.Methods_("Query_GetacBIOSSettings"). inParameters.SpawnInstance_()

'--------------------------------------------------------------------------------------------------
' Add the input parameters.
'--------------------------------------------------------------------------------------------------
objInParam.Properties_.Item("DataIn") =    "OSSelect"

'--------------------------------------------------------------------------------------------------
' Execute the method and obtain the return status.
' TheOutParameters object in objOutParams is created by the provider.
'--------------------------------------------------------------------------------------------------
Set objOutParams = objWMIService.ExecMethod("Query_GetacBIOSSettings.InstanceName='ACPI\PNP0C14\0_0'",
"Query_GetacBIOSSettings", objInParam)

'--------------------------------------------------------------------------------------------------
' ListOutParams
'--------------------------------------------------------------------------------------------------
Wscript.Echo "Out Parameters: "&objInParam.Properties_.Item("DataIn")
Wscript.echo "DataOut: " &objOutParams.DataOut
```


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Appendix D.Check Procedure for Remote Access

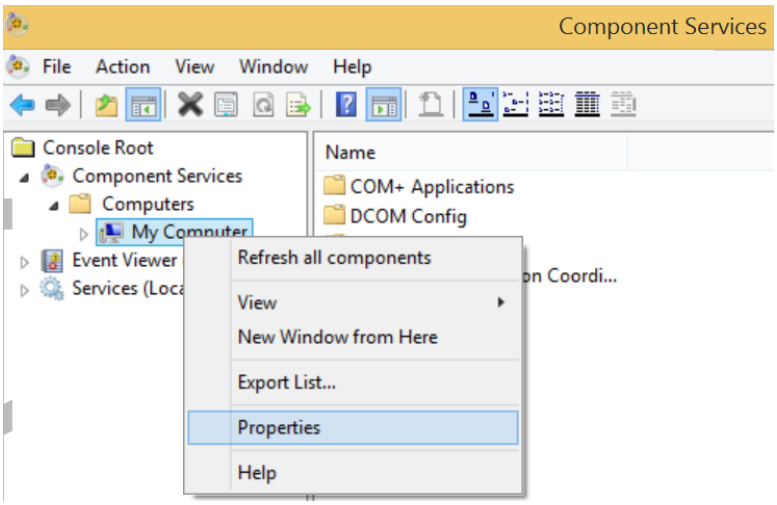
E.1. DCOM permissions

Step 1. Search -> **“Dcomcnfg”**

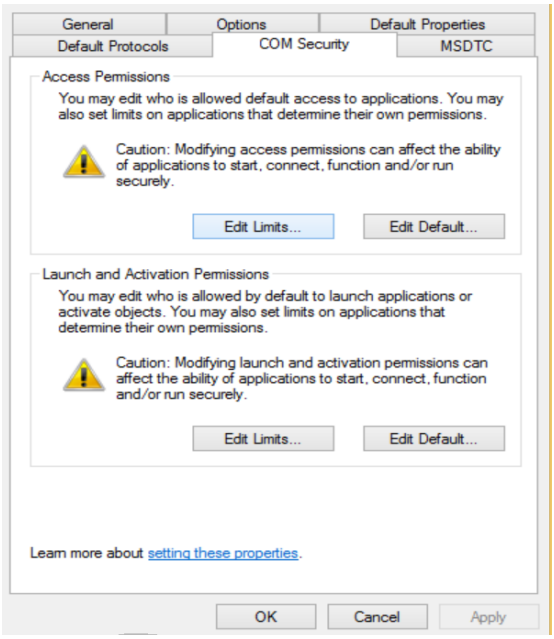
Step 2. Run **“Dcomcnfg”**

Step 3. Expand “**Component Services”** -> “**Computers”** -> “**My Computer”**

Step 4. Open **“My Computer Properties”**



Step 5. Go to “**COM Security”** tab



Step 6. Enter **“Access Permissions”** by clicking **“Edit Limits”**, and set **“Local Activation”** and **“Local Launch”** to Allow for **“Everyone”.**

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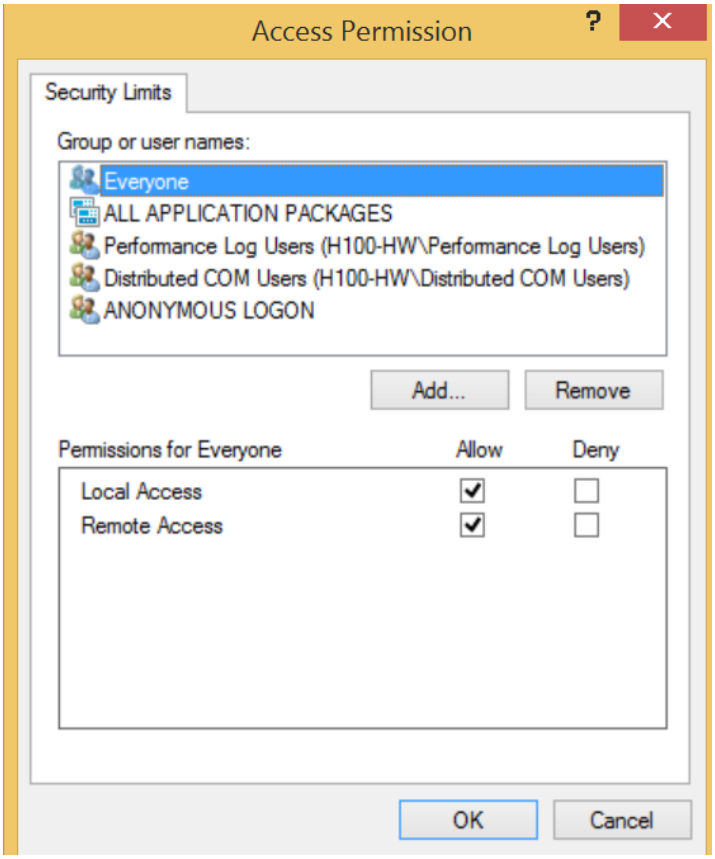
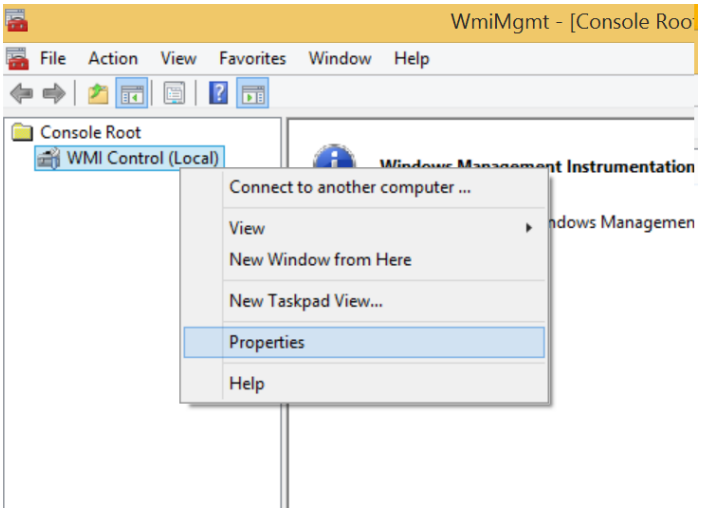


E.2. WMI permissions

Step 1. Search -> **"WMImgmt.msc"**

Step 2. Run **"WMImgmt.msc"**

Step 3. Right click on WMI Control and open **"Properties"**



Step 4. Select **"Security"** tab in WMI Control Properties and open **"SECURITY"**

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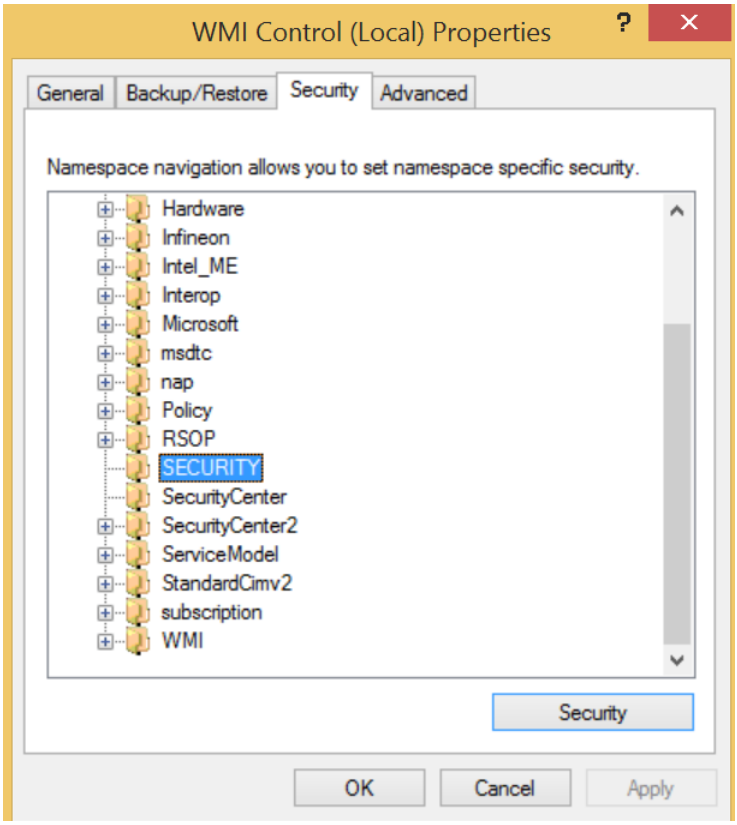
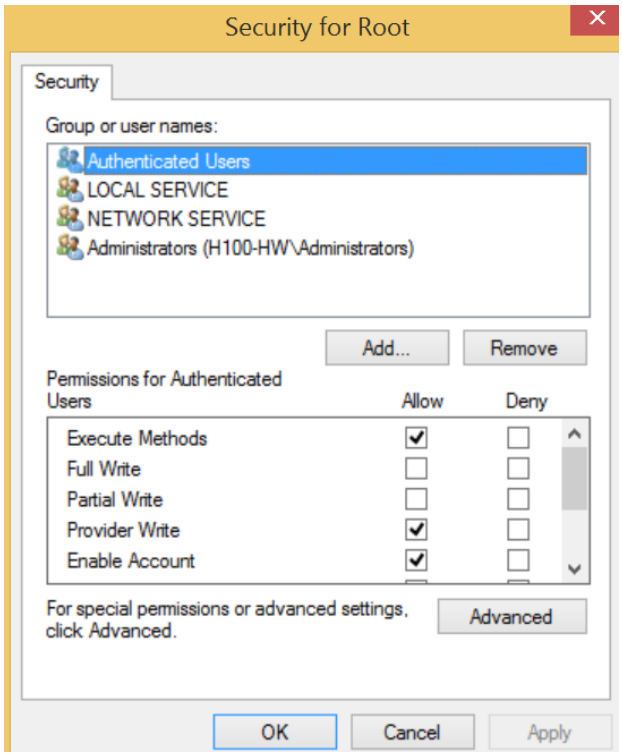


Step 5. Ensure "**Execute Methods"**, **"Provider Write"** and **"Enable Account"** are set to Allow in Permission for Authenticated Users



Step 6. Ensure all permissions are set to Allow in Permissions for Administrators

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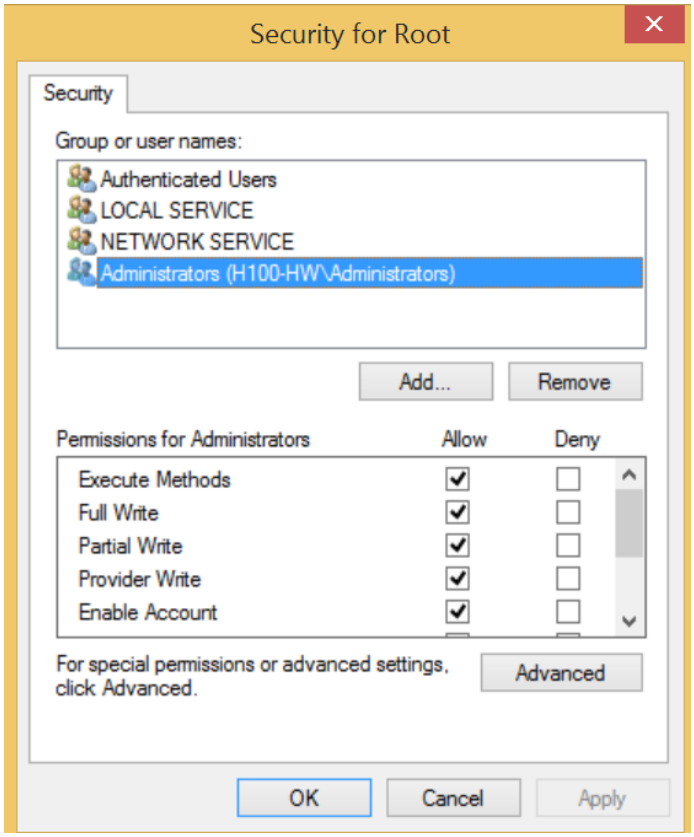
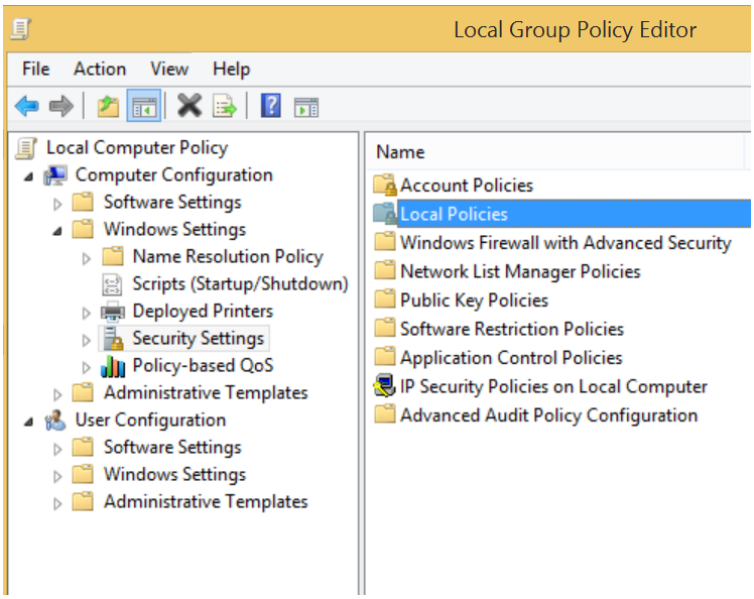


E.3. WMI impersonation Rights

Step 1. Search -> **“gpedit.msc”**

Step 2. Run **“gpedit.msc”**

Step 3. Open **“Local Policies”** from **“Security Settings”** in **“Windows Settings”**



Step 4. Open **“Impersonate a client after authentication”** from **“User Rights Assignment”** in **“Local Policies”**.

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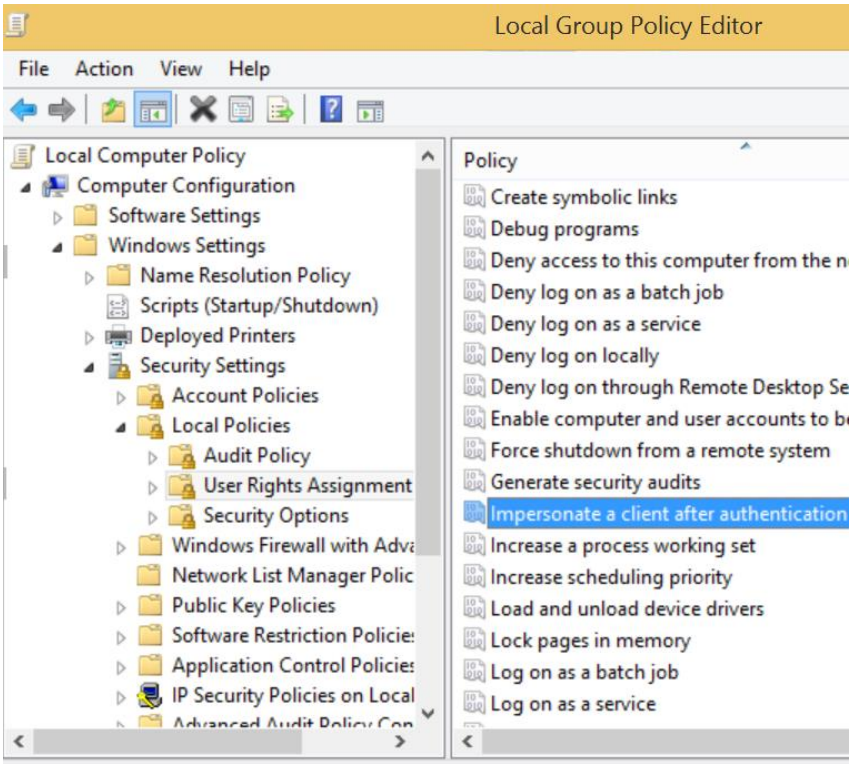
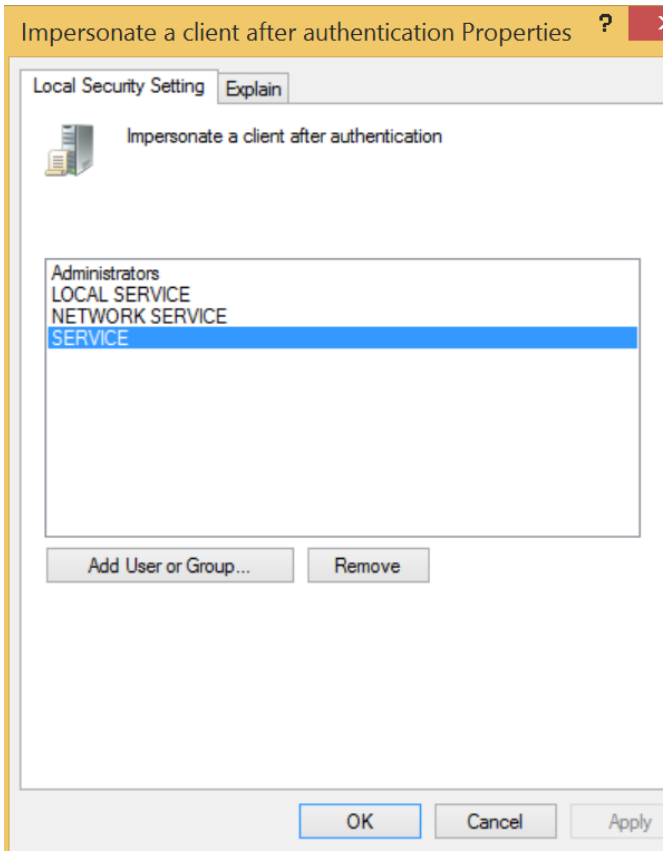


Step 5. Verify **"SERVICE"** is granted for **"Impersonate a client after authentication"** in **"Local Security Setting"**



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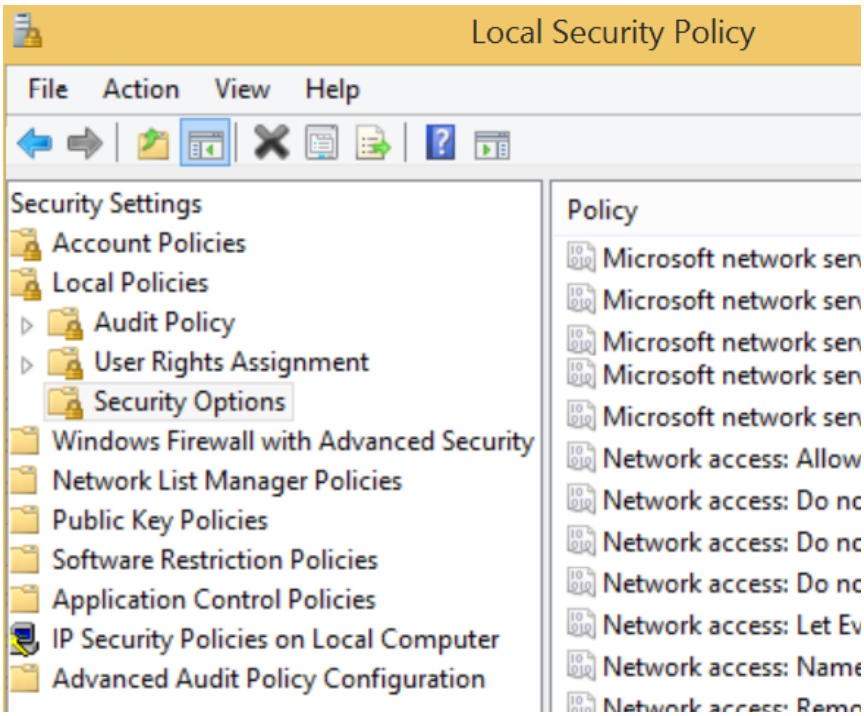
E.4. Network Access

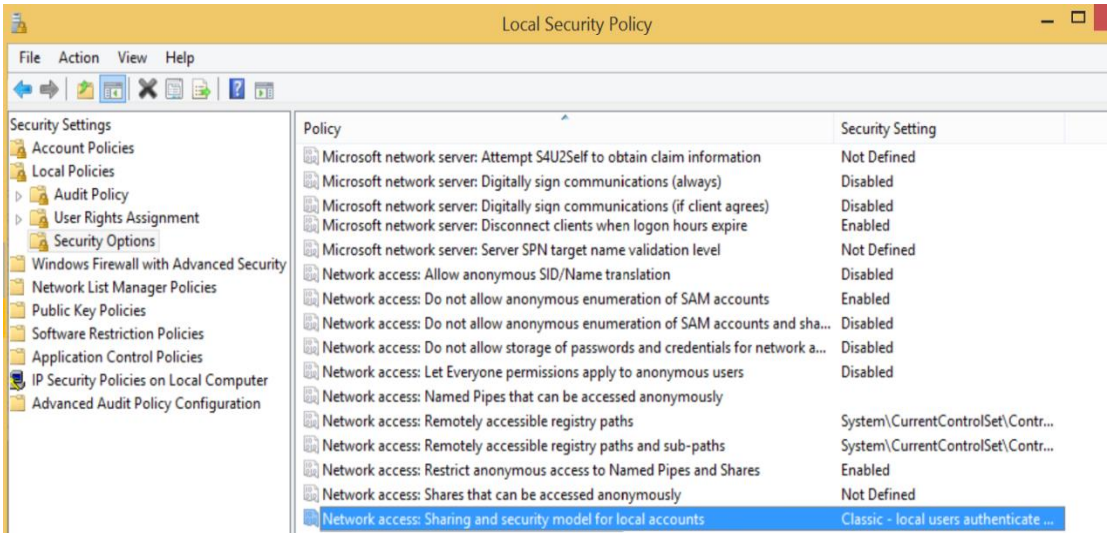
Step 1. Search -> **“secpol.msc”**

Step 2. Run **“secpol.msc”**

Step 3. Open **“Security Options”** from **“Local Policies”** in **“Security Settings”**



Step 4. Check that the Security Setting of **“Network Access: Sharing and security model for local accounts”** is set to **“Classic”**.



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