



**Getac BIOS Configuration
with
Windows Management
Instrumentation
for Comet Lake Platform**

Rev 1.03

Apr 23, 2024

Revision History

Rev	Date	Description
R1.00	2019/10/22	Cometlake platform first release for B360 projects
	2020/06/01	Modify format for B360 and other projects formal release
R1.01	2020/09/26	Add UX10G2 and V110G6 Models Mapping Table
R1.02	2022/08/09	Add FN and Ctrl Key Placement item.
R1.03	2024/04/23	Add "IntergratedWebcam" and "Bottomcamera" items for UX10G2, A140G2 and V110G6. Revised wording and format for p5, 7~9, 13, 18~26

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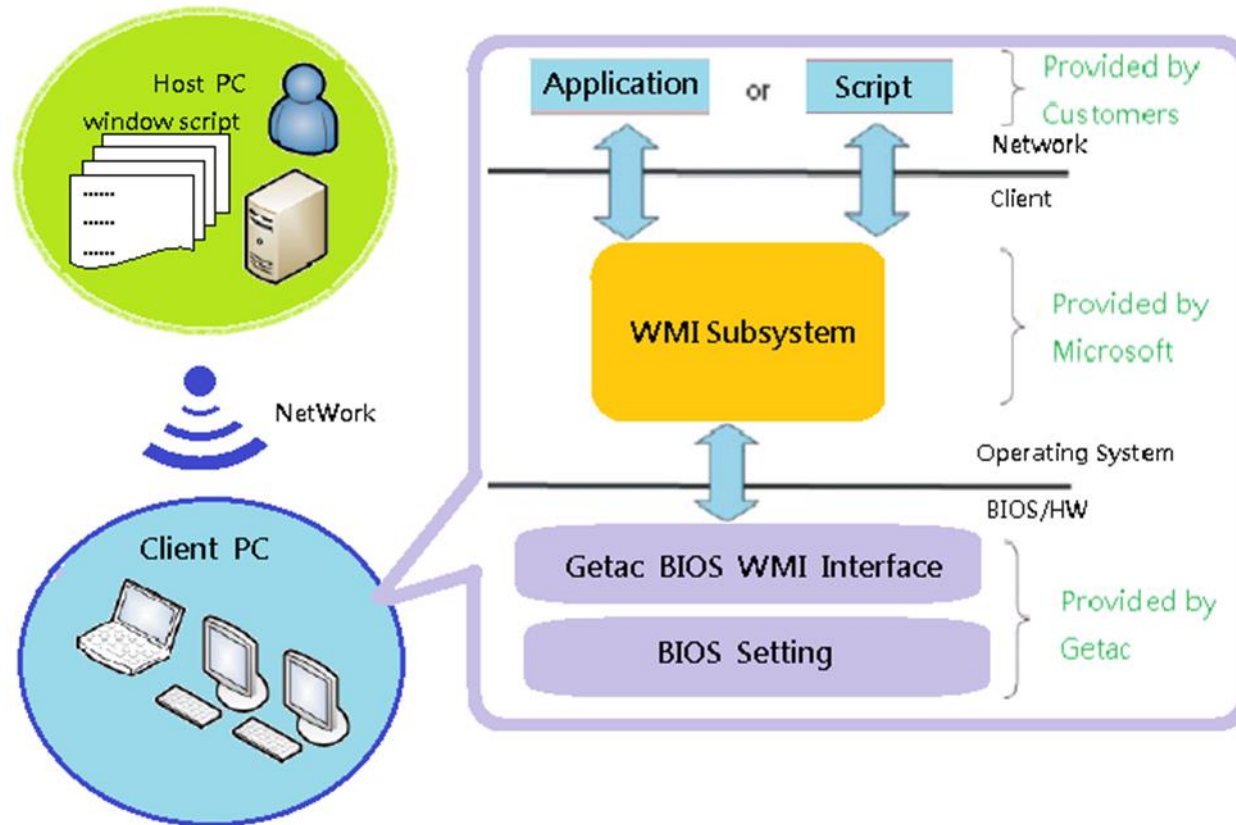
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Chapter 1.Introduction

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

1.1. Overview

The most of Windows® operating systems provide Windows Management Instrumentation (WMI). Getac BIOS WMI interface can receive the instruction from Operating system and access the BIOS settings. IT administrator can query and set all the BIOS settings (except read only item), recover the BIOS to factory settings, set and change passwords, and modify the boot order in the remote PCs.



1.2. Disclaimer

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

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: “SUIPW”

Item table:

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

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

2.3.Set BIOS User Password

Supervisor Password and User Password is set in this class. If users want to set User Password, the Supervisor Password must be set first. If the Supervisor Password is clean, the User Password will be clean as well.

Class name/Method name: Set_GetacBIOSPassWord

Type: Method

Example: "SUVPW,1e234,AB4567"

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, maximum length of a password is **10**, except models supporting "StrongPassword" the maximum length of the password can be up to **64** and the minimum length can be **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 [SUIPW] is 1234.)

Item table:

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

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

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

[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"

Item table:

Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues	Def.
Information	Virtual MAC Address (*Note1)	VirtualMAC	R	XX-XX-XX-XX-XX-XX	
Main	Legacy USB Support	LegacyUSBSupport	R/W	"Disabled", "Enabled"	Y
	CSM Support (*Note2)	CSMSupport	R/W	"Off","On"	Y
	PXE Boot (*Note3)	PXEBoot	R/W	"UEFI","Legacy"	Y
	Internal Numlock	InternalNumlock	R/W	"Disabled","Enabled"	Y
	FN and Ctrl Key Placement	FNCtrlKeyPlacement	R/W	"CtrlFN"," FNCtrl"	Y
	WMI Version	WMIVersion	R	"0000"- "9999"	Y
	Boot Priority (*Note3)	BootPriority	R/W	"UEFI First", "Legacy First"	Y
Advanced	Wake Up Capability	AnyKeyWakeup	R/W	"Disabled", "Enabled"	Y
		DKBDWakeupS3	R/W	"Disabled", "Enabled"	Y
		USBWakeup	R/W	"Disabled", "Enabled"	Y
	System Policy	SystemPolicy	R/W	"Performance", "Balance"	Y
	AC Initiation	ACInitiation	R/W	"Disabled", "Enabled"	Y
	Magnetic Sensor	HallSensor	R/W	"Enabled", "Disabled"	Y
	USB Power-off Charging	PowerShareUSB	R/W	"Disabled", "Enabled"	Y
	Screen Tapping for Boot Options	ScreenTappingforBootOp	R/W	"Disabled", "Enabled"	Y
	MAC Address Pass Through	MACAddressPassThrough	R/W	"Disabled", "Enabled"	Y

Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues	Def.
	Active Management Tech. Support (*Note4)	IntelAMTSupport	R/W	"Disabled", "Enabled"	Y
		IntelAMTSetupPrompt	R/W	"Disabled", "Enabled"	Y
		IntelAMTUSBProvision	R/W	"Disabled", "Enabled"	Y
	Virtualization Tech. Setup	IntelVT	R/W	"Disabled", "Enabled"	Y
		VTd	R/W	"Disabled", "Enabled"	Y
		SGX	R/W	"Disabled", "Enabled" "Software Controlled"	Y
	Device Configuration	WirelessLAN	R/W	"Disabled", "Enabled"	Y
		WWAN	R/W	"Disabled", "Enabled"	Y
		Bluetooth	R/W	"Disabled", "Enabled"	Y
		MediaCardReader	R/W	"Disabled", "Enabled"	Y
		SmartCardReader	R/W	"Disabled", "Enabled"	Y
		RFID	R/W	"Disabled", "Enabled"	Y
		FingerprintScanner	R/W	"Disabled", "Enabled"	Y
		IntergratedWebcam	R/W	"Disabled", "Enabled"	Y
		Bottomcamera	R/W	"Disabled", "Enabled"	Y
		SystemUSBPort	R/W	"Disabled", "Enabled"	Y
		DockingUSBPortSetting	R/W	"USB2.0", "USB3.0"	Y
		Microphone	R/W	"Disabled", "Enabled"	Y
		InternalSpeaker	R/W	"Disabled", "Enabled"	Y
Security	Password on Boot	PasswordonBoot	R/W	"Disabled", "Enabled"	Y
	StrongPassword	StrongPassword	R/W	"Disabled", "Enabled"	Y
	PasswordConfig	PasswordConfig	R/W	"04"- "64"	Y
	Secure Boot Configuration (*Note2)	SecureBoot	R/W	"Disabled", "Enabled"	Y
	Security Freeze	SecurityFreezeLock	R/W	"Disabled", "Enabled"	Y

Page	Item	WMI Item/ Return Item	Attr.	Return/AcceptValues	Def.
	Lock				
	TPMSetupMenu (*Note5)	TPMSupport	R/W	"Disabled", "Enabled"	Y
	Intel Trusted Execution Technology (*Note4) (*Note5)	IntelTrustedExeTech	R/W	"Disabled", "Enabled"	Y
Boot	Boot Type Order (*Note6)	BootTypeOrder	R/W	"HardDisk", "USBDrive", "Network", "USBBD", "CDROM"	Y
	Boot Device	HardDiskDrive	R/W	"Off", "On"	Y
		USBDrive	R/W	"Off", "On"	Y
		USBBDVDDrive	R/W	"Off", "On"	Y
		NetworkDrive	R/W	"Off", "On"	Y
	CDDVDDrive	R/W	"Off", "On"	Y	

*note1: It will return virtual MAC address when there is no physical network card in this system.

*note2: "CSM Support" can be set only when "Secure Boot" is disabled.

*note3: The default setting of "PXE Boot" is "UEFI". And the default setting of "Boot Priority" is "UEFI First"

"PXE Boot" and "Boot Priority" can be toggled only when "CSM Support" is on.

*note4: Only AMT SKU systems are supported.

*note5: "Intel Trusted Execution Technology" item can be allowed to update only when "TPM Support" is enabled.

In other cases, "FAIL" is returned as it is not supported.

"TPM Support" item can be updated just when "Intel Trusted Execution Technology" doesn't been enabled.

*note6 :

"BootTypeOrder" Individual model return/accept values case	
S410G3/B360	Others
"HardDisk", "USBdisk", "Network", "USBCD", "CDROM"	"HardDisk", "USBdisk", "Network", "USBCD"

O = Support
X = Not Support

Appendix A-1.Models Mapping Table

Page	Item	WMI Item/ Return Item	Attr.	B360	A140 G2	UX10 G2	V110 G6				
Information	Virtual MAC Address	VirtualMAC	R	X	X	X	X				
Main	Legacy USB Support	LegacyUSBSupport	R/W	o	o	o	o				
	CSM Support	CSMSupport	R/W	o	o	o	o				
	PXE Boot	PXEBoot	R/W	o	o	o	o				
	Internal Numlock	InternalNumlock	R/W	o	X	X	o				
	FN and Ctrl Key Placement	FNCtrlKeyPlacement	R/W	o	X	o	o				
	WMI Version	WMIVersion	R	o	o	o	o				
	Boot Priority	BootPriority	R/W	o	o	o	o				
	WakeUp Capability	AnyKeyWakeup	R/W	o	X	X	o				
		USBWakeup	R/W	o	o	o	o				
		DKBDWakeupS3	R/W	X	X	X	X				
	System Policy	SystemPolicy	R/W	o	o	o	o				
	AC Initiation	ACInitiation	R/W	o	o	o	o				
	Magnetic Sensor	HallSensor	R/W	o	o	o	o				
	USB Power-off Charging	PowerShareUSB	R/W	o	X	X	o				
	Screen Tapping for Boot Options	ScreenTappingforBootOp	R/W	X	o	o	o				
	MAC Address Pass Through	MACAddressPassThrough	R/W	o	o	o	o				
	Active Management Tech. Support	IntelAMTSupport	R/W	o	o	o	o				
		IntelAMTSetupPrompt	R/W	o	o	o	o				
		IntelAMTUSBProvision	R/W	o	o	o	o				
	Virtualization Tech. Setup	IntelVT	R/W	o	o	o	o				
VTd		R/W	o	o	o	o					
SGX		R/W	o	o	o	o					

Page	Item	WMI Item/ Return Item	Attr.	B360	A140 G2	UX10 G2	V110 G6				
	Device Configuration	WirelessLAN	R/W	o	o	o	o				
		WWAN	R/W	o	o	o	o				
		Bluetooth	R/W	o	o	o	o				
		MediaCardReader	R/W	o	X	X	o				
		SmartCardReader	R/W	o	X	X	x				
		RFID	R/W	X	X	X	x				
		FingerprintScanner	R/W	o	X	X	x				
		IntergratedWebcam	R/W	o	o	o	o				
		Bottomcamera	R/W	X	o	o	o				
		SystemUSBPort	R/W	o	o	o	o				
		DockingUSBPortSetting	R/W	o	o	o	o				
		Microphone	R/W	o	o	o	o				
		InternalSpeaker	R/W	o	o	o	o				
Security	Password on Boot	PasswordonBoot	R/W	o	o	o	o				
	StrongPassword	StrongPassword	R/W	o	o	o	o				
	PasswordConfig	PasswordConfig	R/W	o	o	o	o				
	Secure Boot Configuration	SecureBoot	R/W	o	o	o	o				
	SecurityFreezeLoc k	SecurityFreezeLock	R/W	o	o	o	o				
	TPMSetupMenu	TPMSupport	R/W	o	o	o	o				
	Intel Trusted Execution Technology	IntelTrustedExeTech	R/W	o	o	o	o				
Boot	Boot Type Order	BootTypeOrder	R/W	o	o	o	o				
	Boot Device	HardDiskDrive	R/W	o	o	o	o				
		USBDrive	R/W	o	o	o	o				
		USBCDDVDDrive	R/W	o	o	o	o				
		NetworkDrive	R/W	o	o	o	o				

Page	Item	WMI Item/ Return Item	Attr.	B360	A140 G2	UX10 G2	V110 G6				
		CDDVDDrive	R/W	o	X	X	X				

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\PNPOC14\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") = "SUIPW,,1"

'-----
'Execute the method and obtain the return status.
' TheOutParameters object in objOutParams is created by the provider.
'-----
Set objOutParams = objWMIService.ExecMethod("Set_GetacBIOSPassWord.InstanceName='ACPI\PNPOC14\0_0'",
"Set_GetacBIOSPassWord", objInParam)

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

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 specific to 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
```

Appendix D.VB Script to enable the TPM Support. Enable (TPM Support)

Users can enable TPM Support with below VBScript after configure mode set.

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

'-----
'As the BIOS security, users must switch to the BIOS configure mode before access the Getac WMI Interface
'See this Spec 2.4. Switch to the BIOS Configure Mode
'-----

Set objShare = objWMIService.Get("Set_GetacBIOSConfigMode.InstanceName='ACPI\PNP0C14\0_0'")
Set objInParam = objShare.Methods_("Set_GetacBIOSConfigMode").inParameters.SpawnInstance_()
objInParam.Properties_.Item("DataIn") = ",SetStart"
Set objOutParams =
objWMIService.ExecMethod("Set_GetacBIOSConfigMode.InstanceName='ACPI\PNP0C14\0_0'", "Set_GetacBIOSConfigM
ode", objInParam)

Wscript.echo "Feature: " & objInParam.Properties_.Item("DataIn")
Wscript.echo "DataOut: " & objOutParams.DataOut

'-----
'Add the input parameters, for this this example "TPMSupport,Enabled"
'-----

Set objShare = objWMIService.Get("Set_GetacBIOSSettings.InstanceName='ACPI\PNP0C14\0_0'")
Set objInParam = objShare.Methods_("Set_GetacBIOSSettings").inParameters.SpawnInstance_()
objInParam.Properties_.Item("DataIn") = "TPMSupport,Enabled"
Set objOutParams =
objWMIService.ExecMethod("Set_GetacBIOSSettings.InstanceName='ACPI\PNP0C14\0_0'", "Set_GetacBIOSSettings",
objInParam)

Wscript.echo "Feature: " & objInParam.Properties_.Item("DataIn")
Wscript.echo "DataOut: " & objOutParams.DataOut
```

Appendix E. Check Procedure for Remote Access

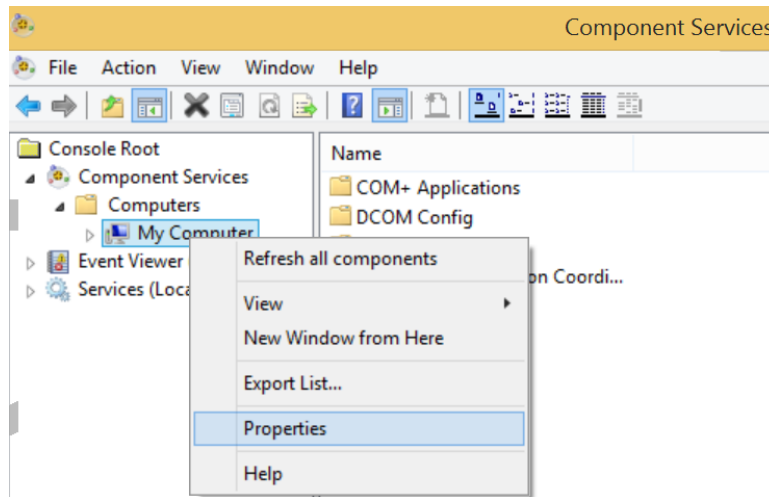
E.1. DCOM permissions

Step 1. Search -> **Dcomcnfg**

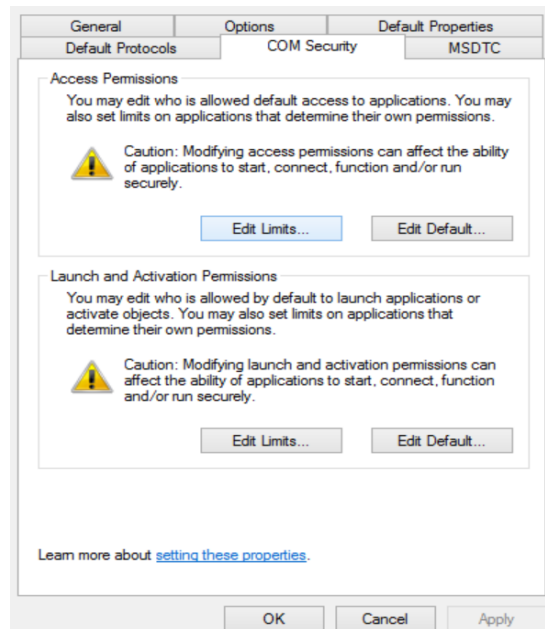
Step 2. Run **“Dcomcnfg”**

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

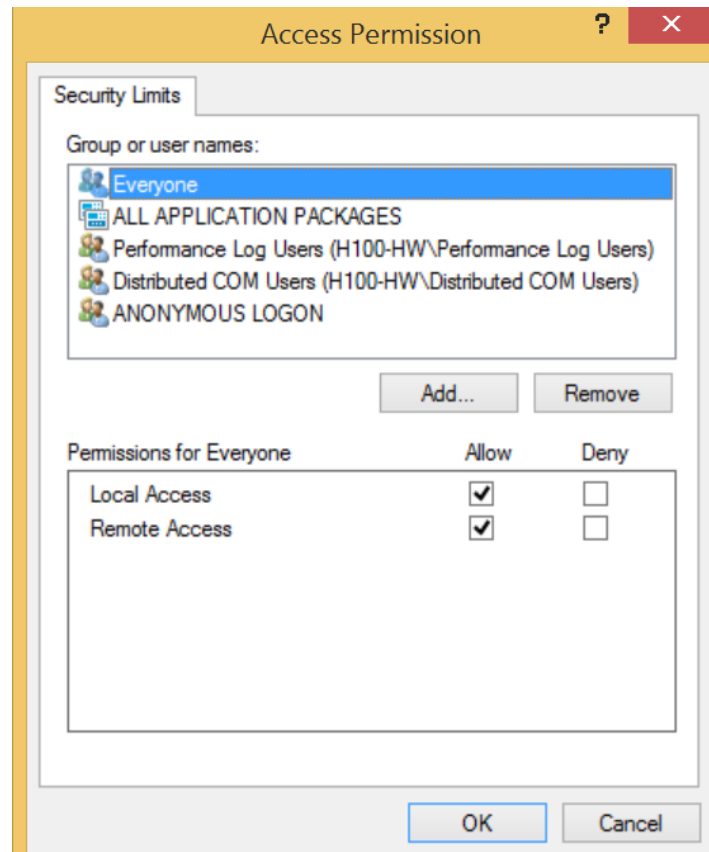
Step 4. Open **“My Computer Properties”**



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”**.

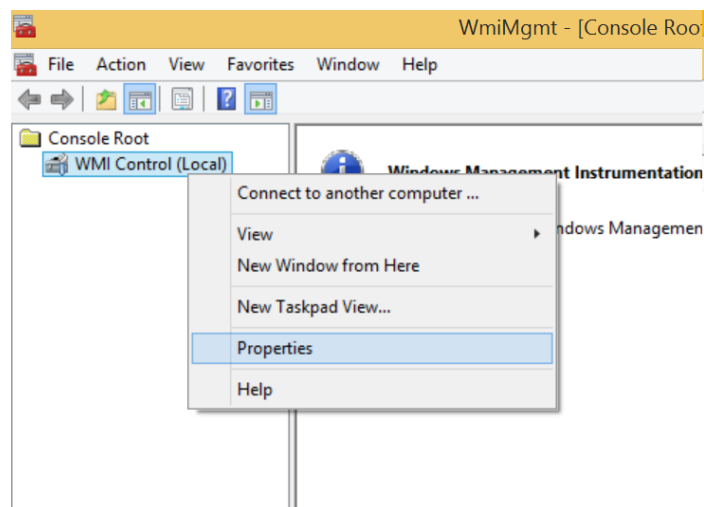


E.2. WMI permissions

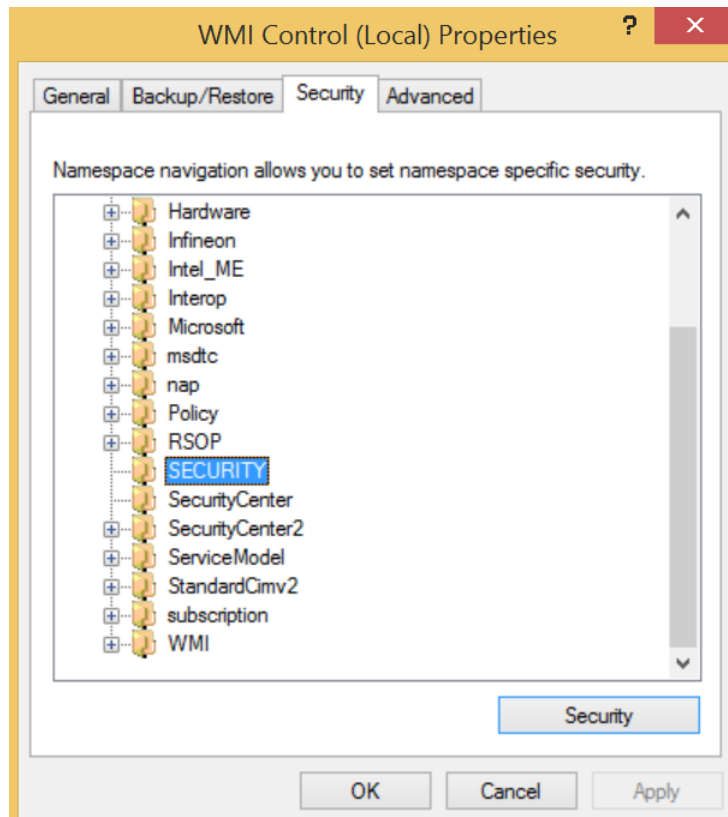
Step 1. Search -> **WMIgmt.msc**

Step 2. Run **"WMIgmt.msc"**

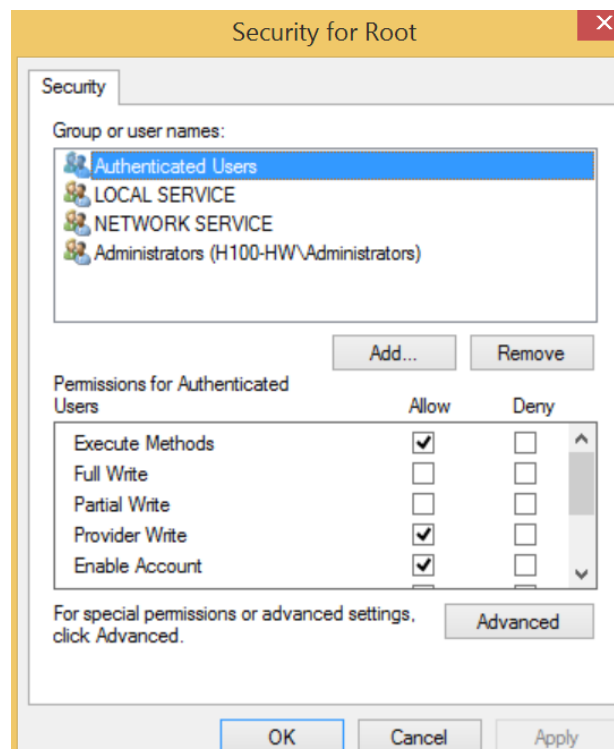
Step 3. Right click on WMI Control and open **"Properties"**



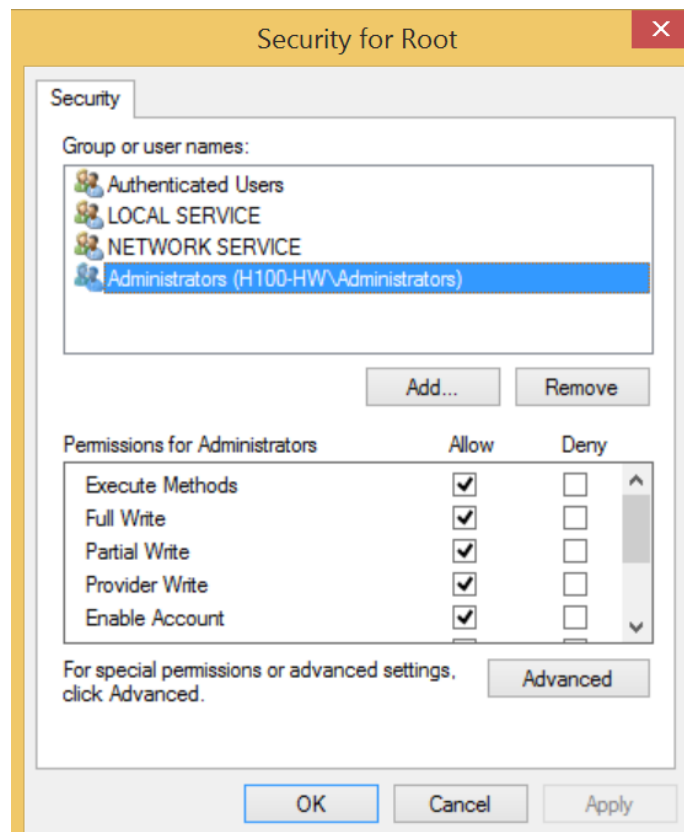
Step 4. Select **"Security"** tab in WMI Control Properties and open **"SECURITY"**



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

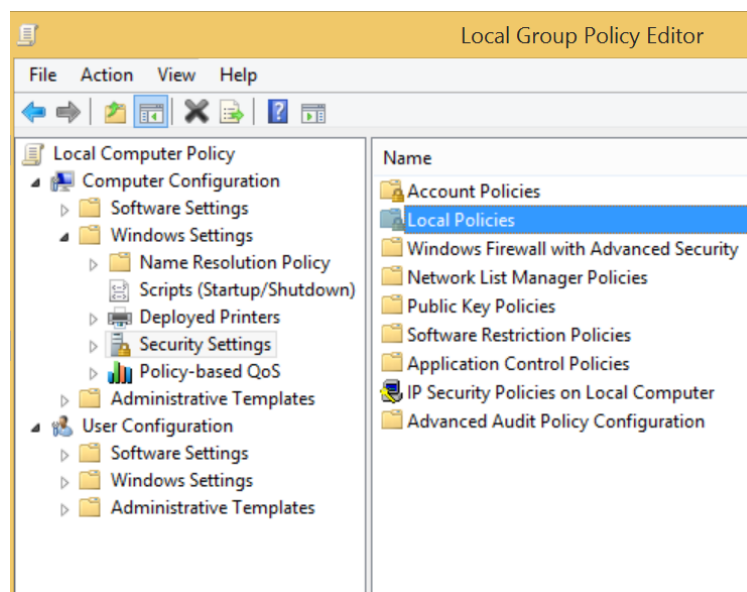


E.3. WMI impersonation Rights

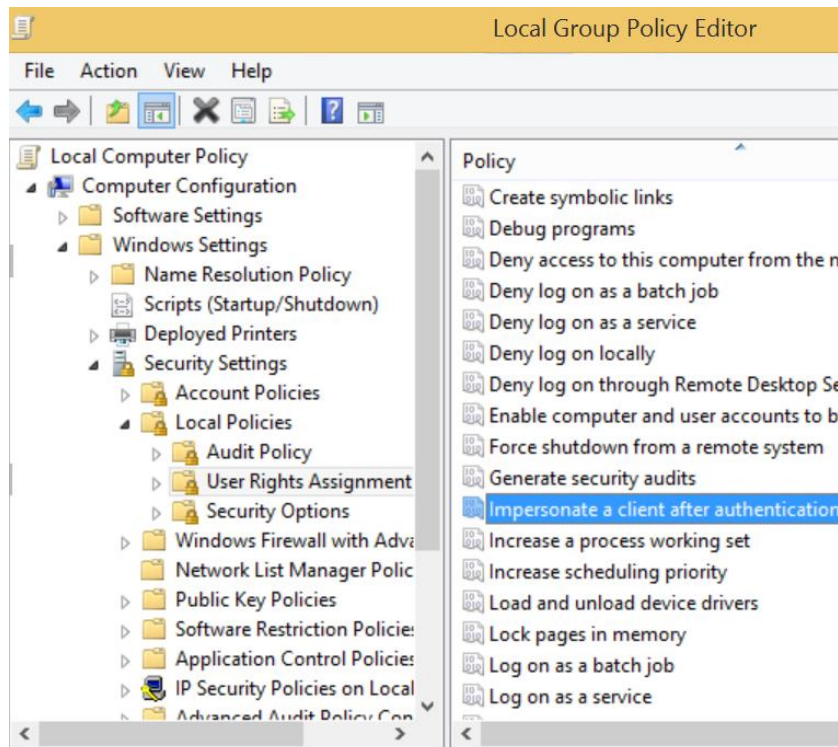
Step 1. Search -> **gpedit.msc**

Step 2. Run **“gpedit.msc”**

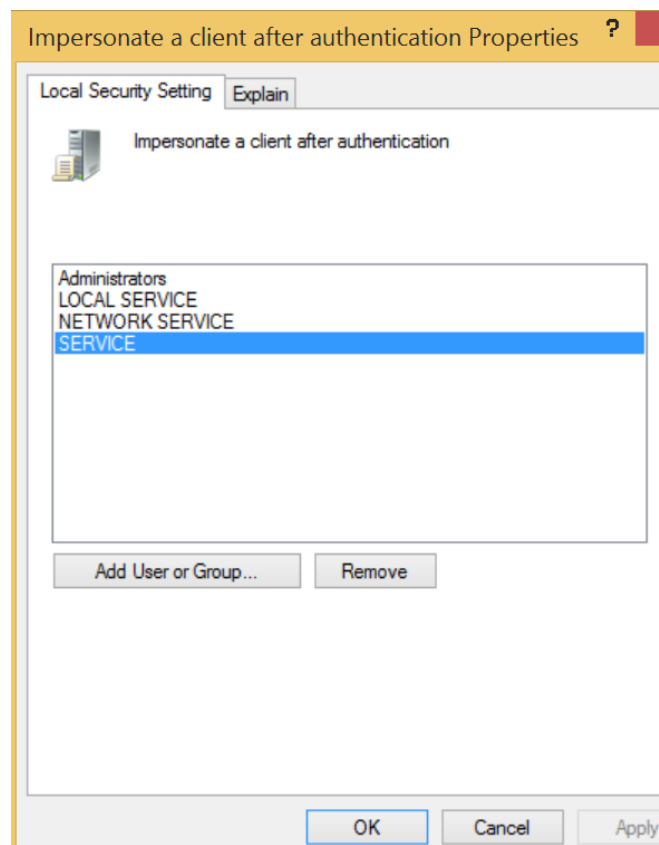
Step 3. Open **“Local Policies”** from **“Security Settings”** in **“Windows Settings”**



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



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

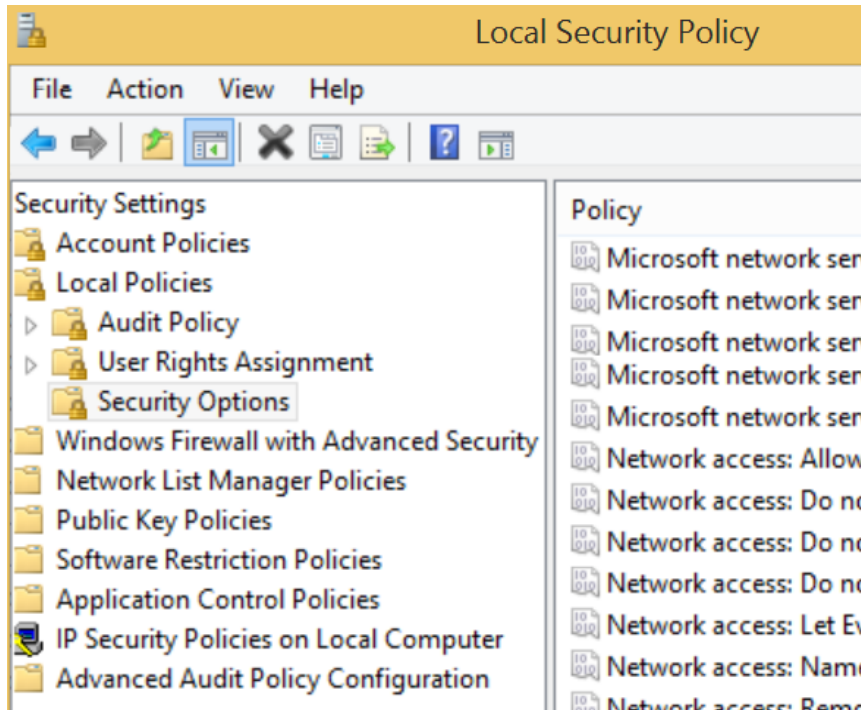


E.4. Network Access

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”**

