






# **Windows 10**

## **Enterprise LTSC 2021 Operating System Installation Guide**

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Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

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# WIN 10 Operating System Installation Guide



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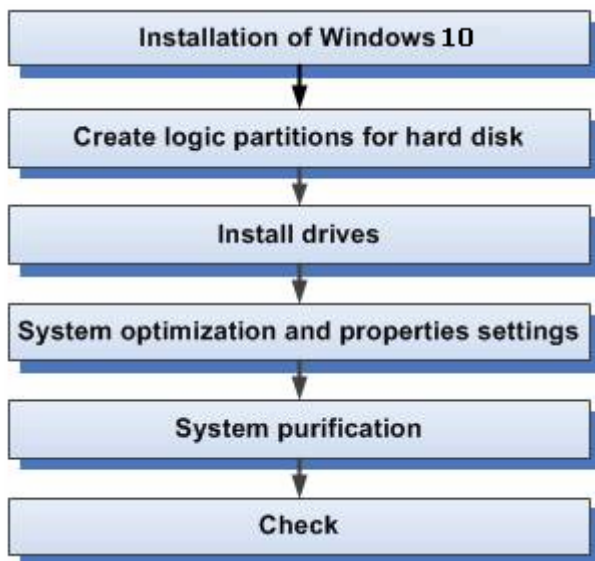
**Attentions:**

- This guideline is only applicable to closed network node operating system.
  - Before installation, please read relevant user manual and observe safety notices.
  - Please refer to the computer user manual for specific instructions or log on the website of the computer supplier to obtain relevant information.
- 

## Section 1 Flow for Installation of Windows 10

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The operation system is named Windows 10 in this guide; the flow for installation is shown in Figure 1-1.



*Figure 1-1 Flow for installation of Windows*

## Section 2 Installation of Windows 10

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Applicable operating system of this guide is Windows 10 Enterprise LTSC 2021-English-64Bit OS, the installation steps are as follows.

1. Boot up the PC with the installation disk of Windows 10.

Boot up the PC and set disc as boot disc. Insert the installation disk of Windows 10 into CD-ROM, and then enter into the Windows 10 setting interface.

2. Choose the Installation Language
  - Language to install: English(United States)
  - Time and currency format: English(United States)
  - Keyboard or input method: US
3. Start to install

Click "Install now" to start installation.

4. Input product key and add "Next Step" to continue, or click "jump" and input key after installation.
5. Accept the license terms
6. Choose Installation Mode

Select Custom: Install Windows Only (advanced)

7. Create system disk partition
  - 1) Click Driver options (advanced), select the disk partition then click delete on disk partition interface to delete all the original system disk partition on disk partition interface.
  - 2) Click New on disk partition interface to create a new system disk partition, the condition of system disk partition is shown in Table 3-1 List of disk partitions.
  - 3) Then it starts to install Windows 10 up to end.
8. Setting

Select "Use express settings".

9. Personalize
  - User Name: TEMP
  - Password: Supcon@1304

- The hint of password can't contain the password.

PC Name: (Just for example)

- AdvanTrol-Pro: ###\*\* (### is the short name for operation node, \*\* is the IP address for Host. For example, Engineer Station can be named as ES130; Operator Station can be named as OS136.)
- VisualField:####&\_\*\* (### is the short name for operation node, && is the domain, and \*\* is the IP address for Host. For example, Operator Station can be named as OS15\_160.)



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**Tip:**

The user named "Temp" will be deleted and the computer only has four users, Administrator, DefaultAccount, Guest and WDAGUtilityAccount. However, in order to normal execute system installing; the user named "Temp" set here is a must.

---

10. Finish.

## Section 3 Create Logic Partitions for Hard Disk

Entering “This PC” in Search and right clicking it, select “Manage” in right-click menu, Computer Management interface will pop up, in which click Disk Management below Storage, and then the condition of system disk partition will be shown in the right column.



### Tips:

- If there is no “This PC” icon in the default desktop, right-click in the blank and choose “Personalize”, select Themes in the left menu, click "Desktop icon settings" below the "Related Settings", and then select “Computer” in the interface “Desktop Icon Settings”.
- Before personalizing, user needs to use product key to active Windows 10.

Firstly, change CD-ROM to Disk G. Secondly, then select right-click menu “New Simple Volume...” at the unallocated disk to divide the disk into disk D, disk E and disk F. Partition standards are as follows.

**Table 3-1 List of disk partitions**

Hard disk space	Disk icon	Local Disk C (system disk)	Local Disk D (data disk)	Local Disk E (backup disk)	Local Disk F (own disk)	Local Disk G
≥160G	Format	NTFS	NTFS	NTFS	NTFS	CD-ROM
	Capacity	102400MB	The rest	20480MB	20480MB	

Application guideline of each partition is as follows:

- Operating system and Supervision software are to be installed on Disk C.
- Disk D is to be used to store supervision running data.
- Disk E is to be used to backup setup programs, engineering configurations, drivers and etc.
- Disk F is to be used to store process database file (history trend, alarm record, report etc.) which is created by supervision software or other working files.

After finishing logic partitions for hard disk, please backup files in the Windows 10 installation disk by copying it to Disk E.





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**Tips:**

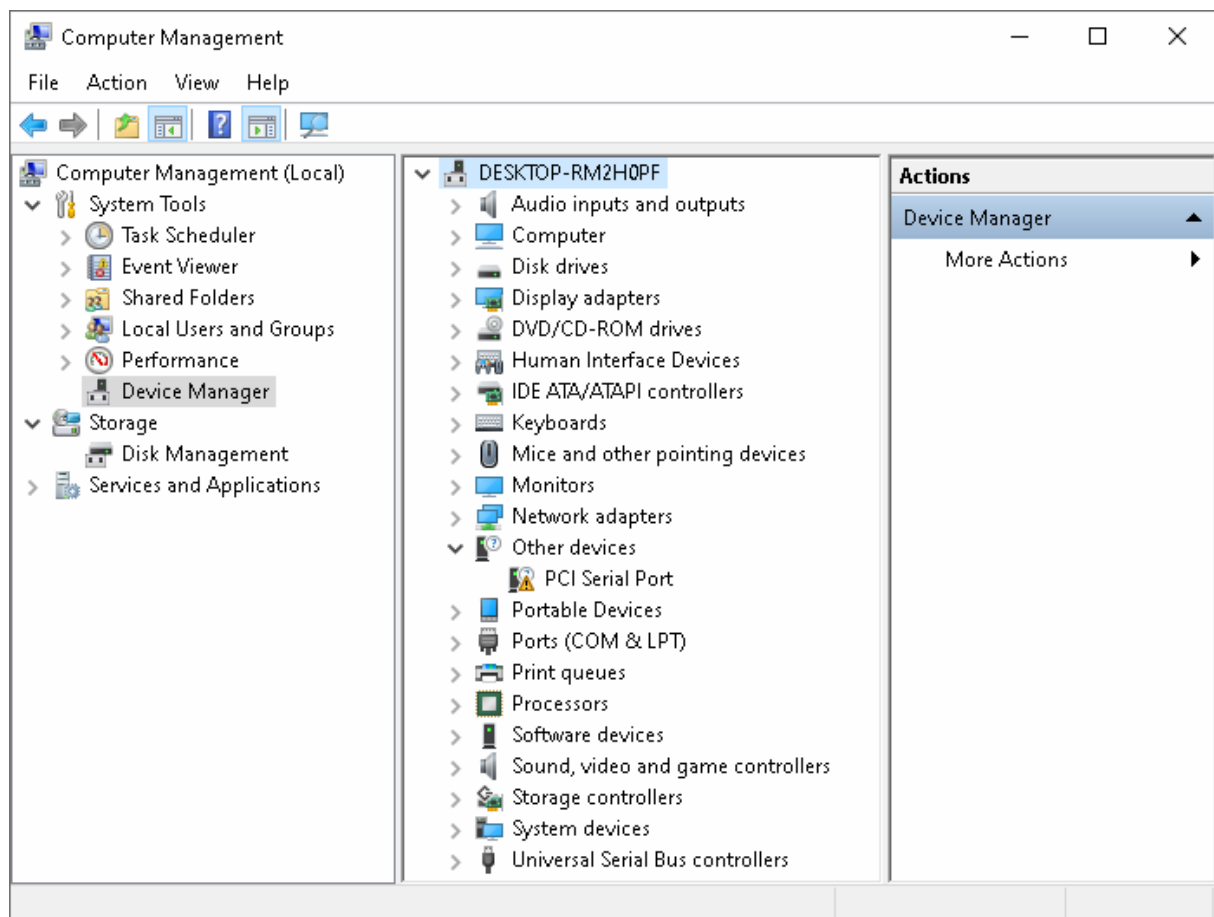
- If you want to reassemble the operation system, you just need to format Disk C directly and it is no necessary for logic partitions for hard disk over again.
  - If there is the rest of hard disk space, the capacity of disk C can be broadened according to circumstances.
-

## Section 4 Install Drivers

### 1. Installation

In the light of host configuration, run the main board driver disc and the integrated components driver disc provided by the host manufacturer, and install every component following hints of installation wizard. Restart computer after finishing installation.

However, if you don't know which drivers should be installed by referencing the wizard, please open the Device Manager in Computer Management interface, it is shown as Figure 4-1, in which those components without finding drive (marked with a yellow interrogation mark or exclamation mark) need to be installed.



**Figure 4-1 Device Manager Interface**

### 2. Backup

Backup the corresponding drivers to disk E.

### 3. Check

There should be no item marked with yellow interrogation mark or exclamation mark in interface Device manager after finishing the installation successfully.



---

**Attention:**

**After finishing the installation of drivers, open the interface "Uninstall or change a program" of Control Panel and check if the software NVIDIA nView Desktop Manager (NVIDIA nView) has been installed. If it has been installed, please forbid or uninstall it.**

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## Section 5 System Optimization and Properties Settings



### Attentions:

- The properties which are not mentioned remain default.
- Settings of different hosts may be different, please set system according to the fact.

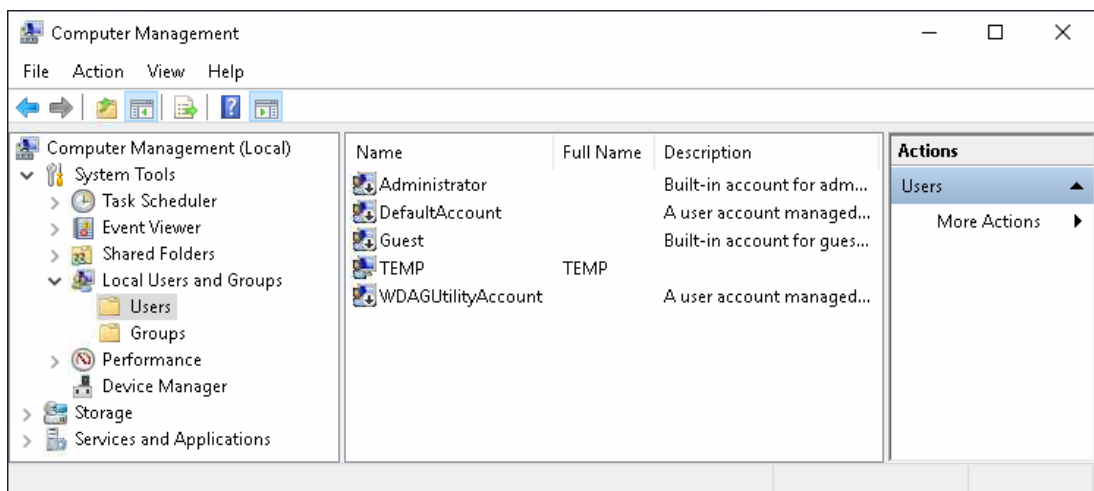
This chapter introduces how to set user accounts, display properties, taskbar and start menu, time, language, system properties, firewall, services, network properties and so on.

### 5.1 User Accounts Settings

#### 5.1.1 Set administrator account

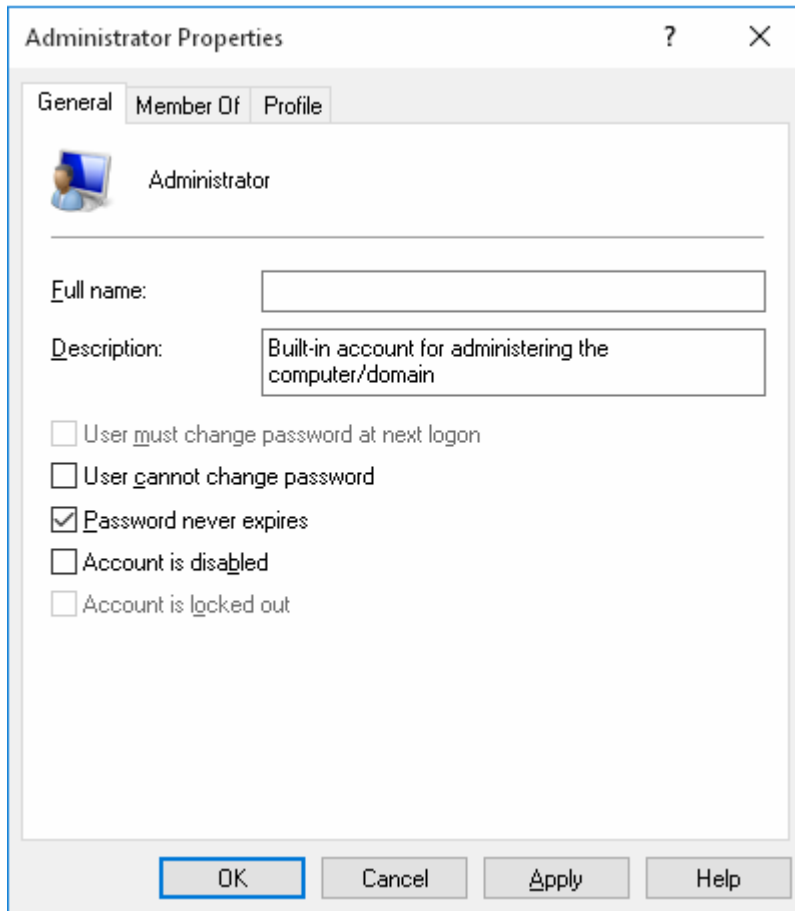
1. Enable administrator account

Right click “This PC”, select “Manage” in the right-click menu, pop up “Computer Management” interface. Select “Users” below “Local Users and Groups”, the user interface shown as Figure 5-1.



**Figure 5-1 User interface**

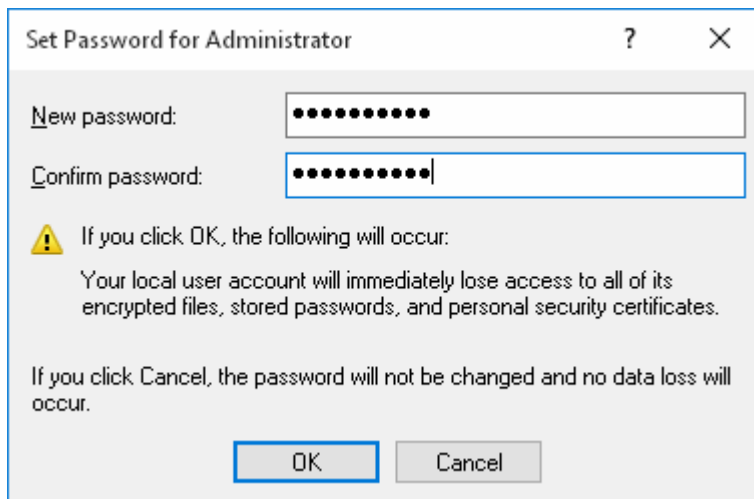
Double click “Administrator”, pop up “Administrator Properties” interface. Deselect “Account is disabled” in “General” option page, and click “Apply” and “OK”.



**Figure 5-2 Deselect "Account is disabled"**

2. Set password for Administrator

Right click "Administrator", select "Set Password..." in the right-click menu, confirm the prompt information then pop up the interface shown as Figure 5-3.

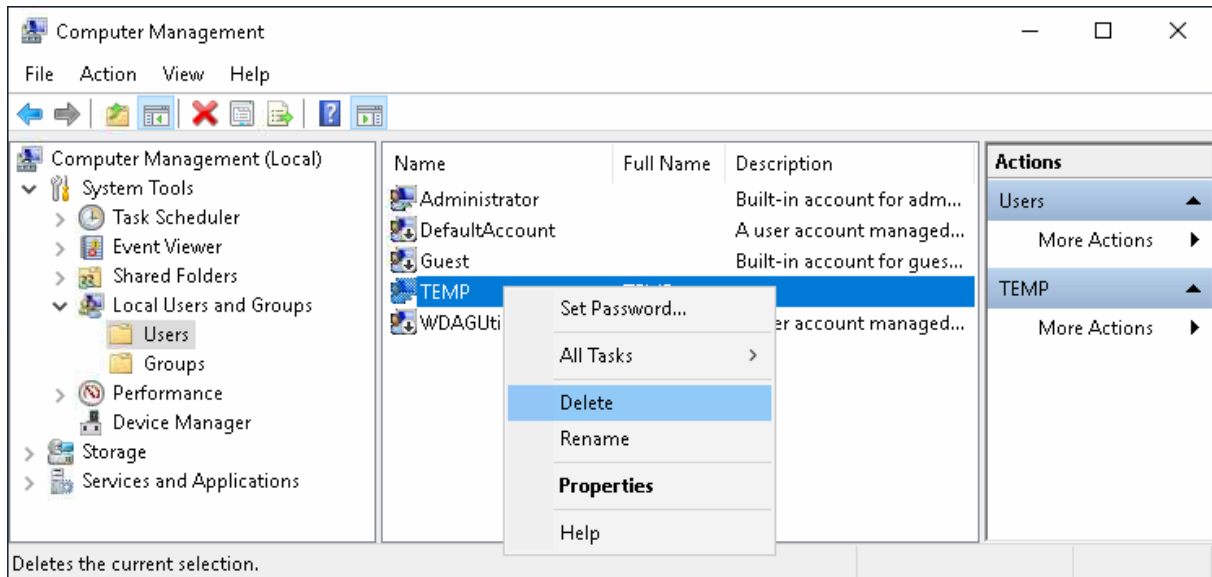


**Figure 5-3 Set password for Administrator**

Type the password then click "OK".

### 5.1.2 Remove user named Temp

Right click user “Temp” in the user interface, and select “Delete” in the right-click menu, as shown in Figure 5-4.



**Figure 5-4 Remove user “Temp”**

Remove user named Temp according to the prompt information.

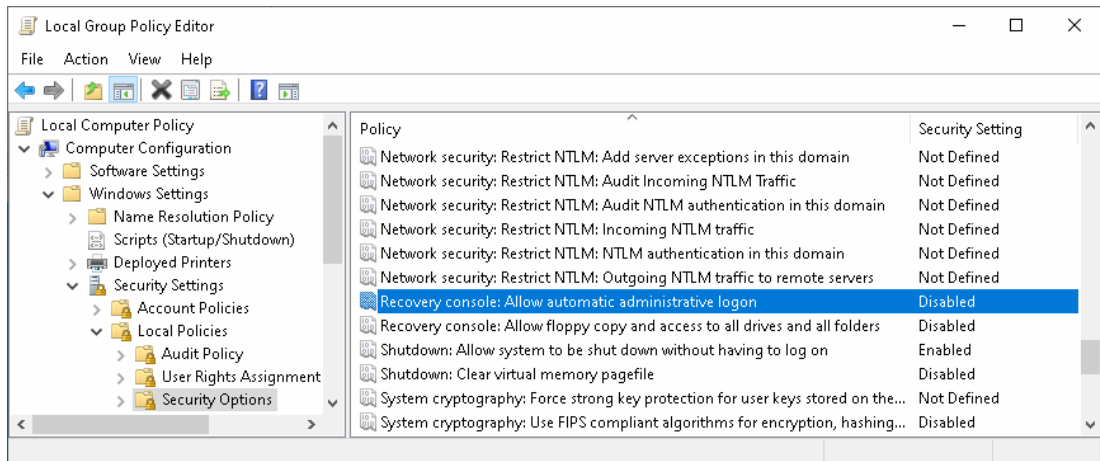


#### Attentions:

- After deleting the user named Temp, you must restart the computer (login as Administrator) and then set all the properties as follows.
- As for the built-in users, which can't be deleted such as DefaultAccount, WDAGUtilityAccount and Guest, please check “Account is disabled” in the properties interface and click “OK”.

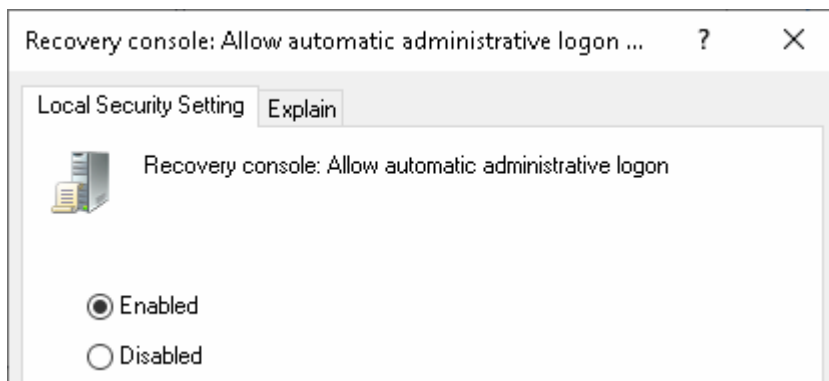
### 5.1.3 Set automatic logon

1. Open “Run” interface by shortcut key “Windows + R”, then type command “gpedit.msc” and click “OK”, “Local Group Policy Editor” dialog box will pop up. Select “Computer Configuration / Windows Settings / Security Settings / Local Policy / Security Options” on the left.



**Figure 5-5 Local Group Policy Editor**

2. Double-click "Recovery console: Allow automatic administrative logon" on the right, select "Enabled" in the pop-up dialog box and click "OK" to save the change.



**Figure 5-6 Set automatic logon**



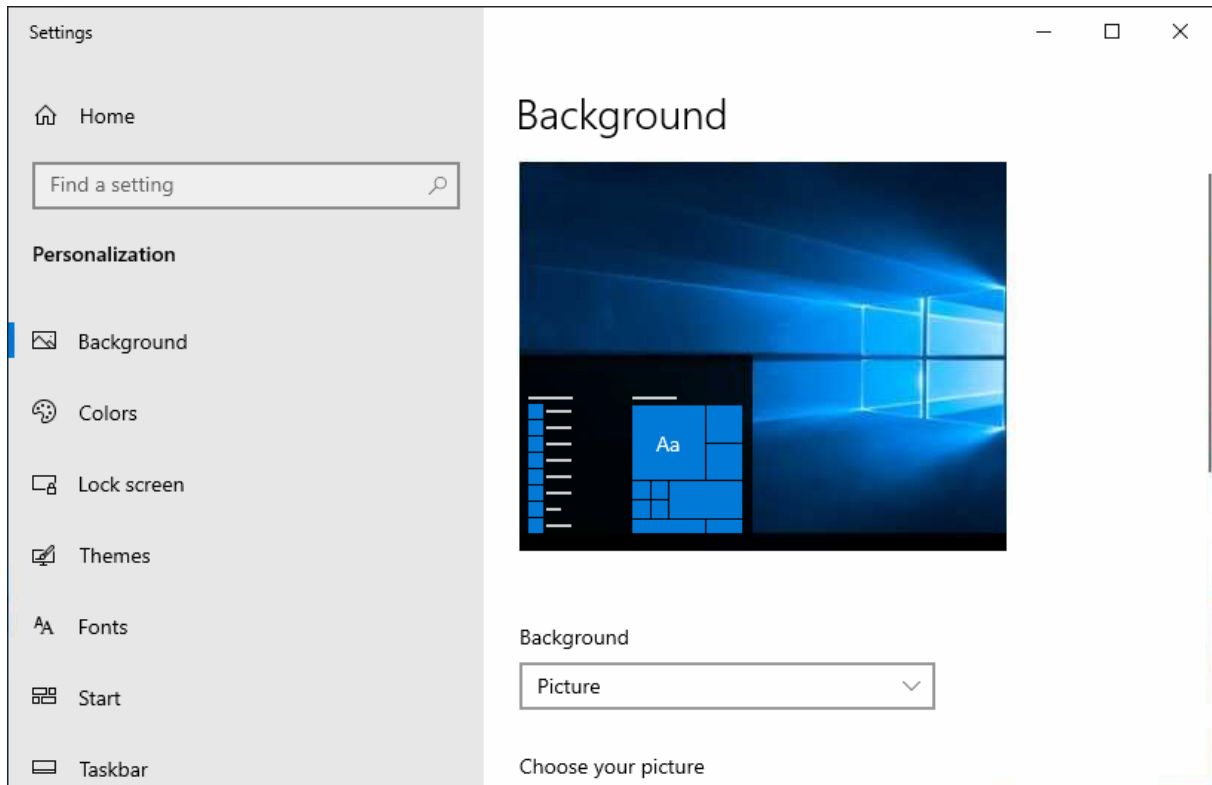
**Tip:**

Click "OK" or "Save" after modification every time.

## 5.2 Display Properties Settings

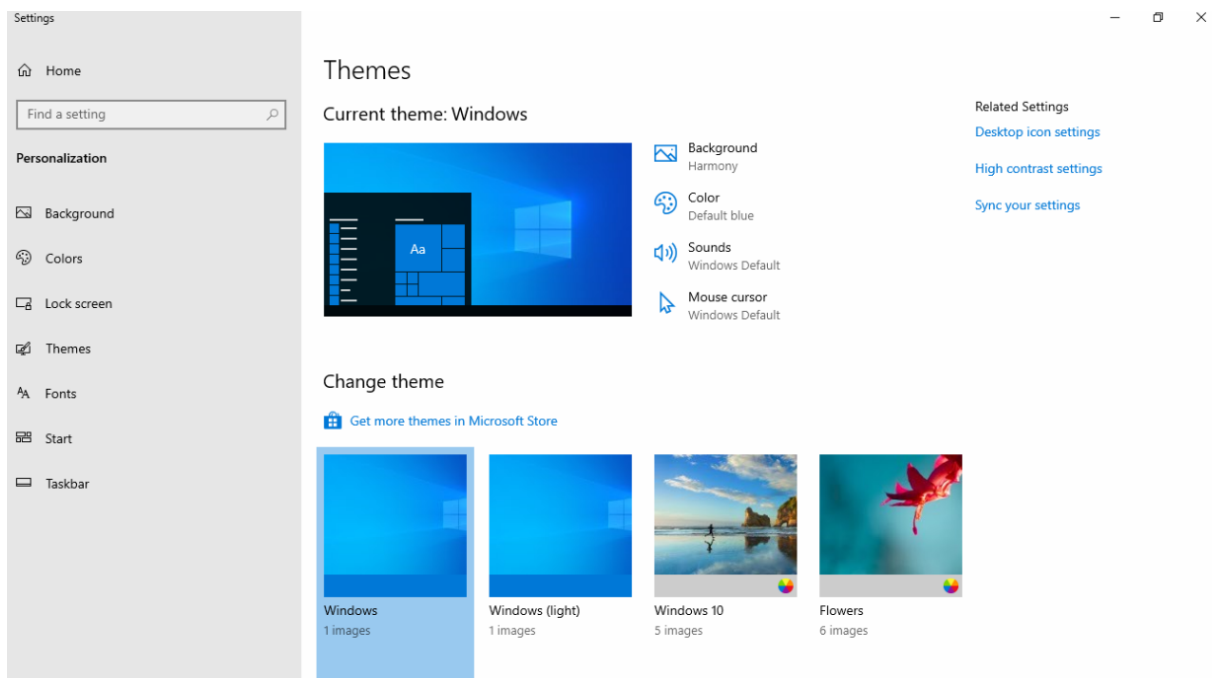
### 5.2.1 Set Windows themes

Right click any blank area of desktop, click "Personalize" in the right-click menu, and then pop up the personalization interface, as shown below.



**Figure 5-7 Personalization interface**

Select “Themes” on the left, and then you can see the personalization interface on the right, as shown in Figure 5-8. Select “Windows” theme in the “Change theme” window.

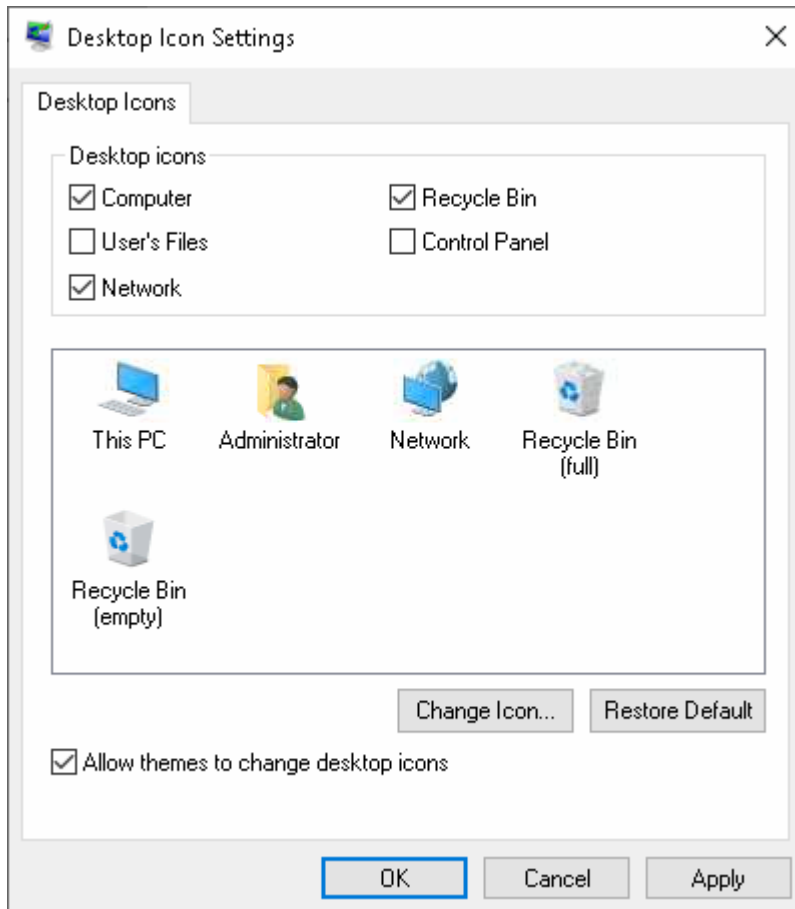


**Figure 5-8 Set Windows themes**



### 5.2.2 Change desktop icons

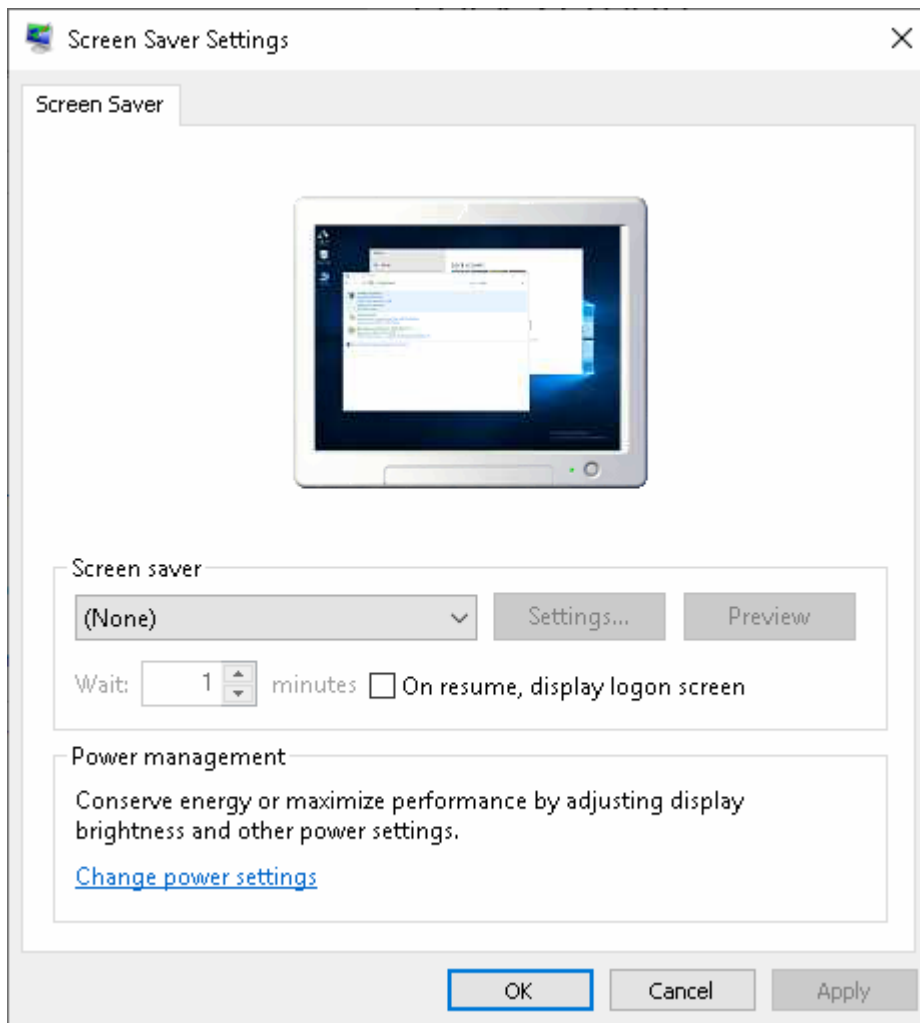
Click “Desktop icon settings” in the “Related Settings” list in Figure 5-8, pop up the dialog box shown as Figure 5-9, check “Computer” and “Network” (“Recycle Bin” is selected by default).



**Figure 5-9 Set desktop icons**

### 5.2.3 Set screen saver

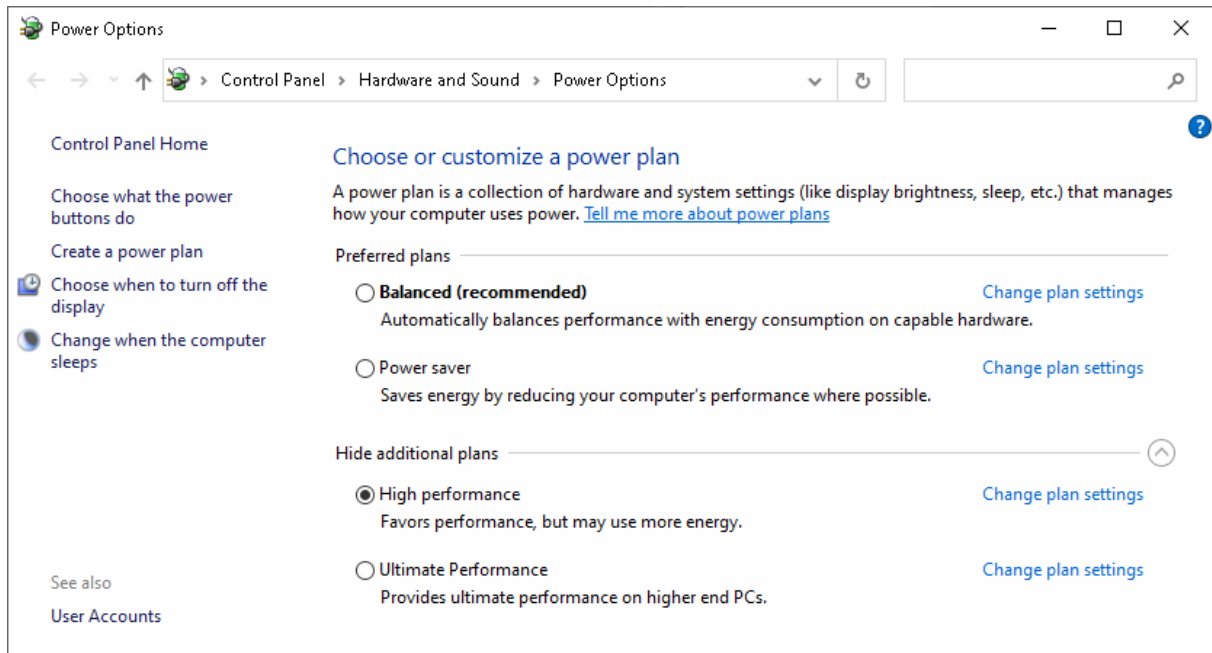
Select "Lock screen" in the left of the interface as Figure 5-7, click “Screen saver settings” at the bottom of the right-hand interface and set “Screen saver” to “None” (default) in the pop-up dialog box as shown in Figure 5-10.



**Figure 5-10 Set Screen Saver**

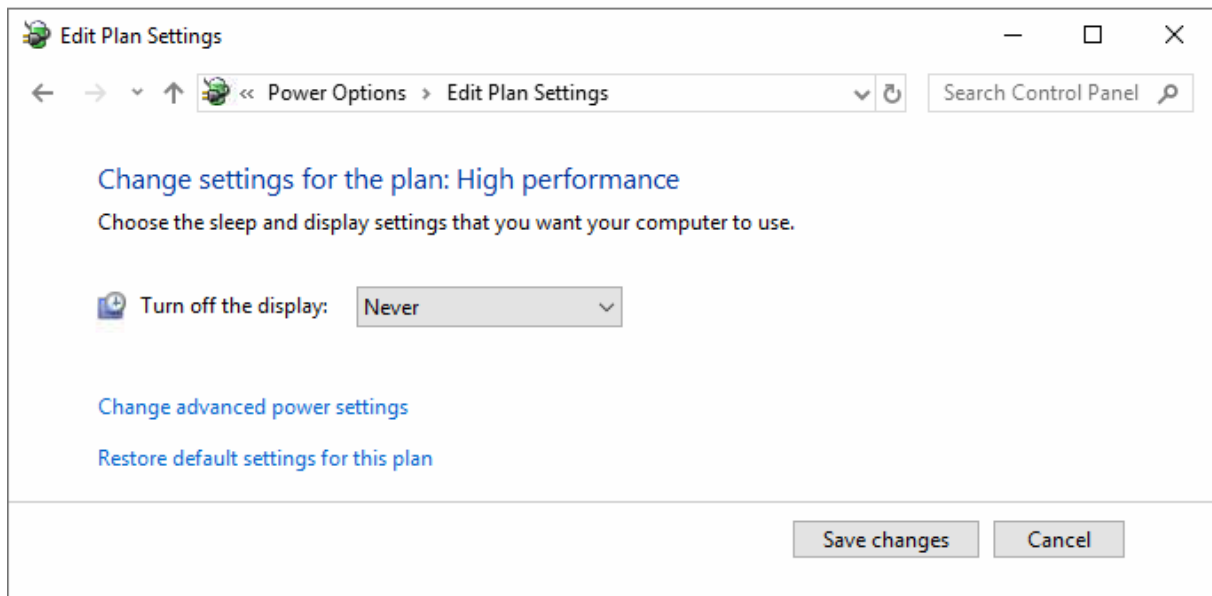
### 5.2.4 Set power options

Click “Change power settings” in “Screen Saver Settings” interface, pop up the interface shown as Figure 5-11.



**Figure 5-11 “Power Options” interface**

Click "Show additional plans" and select "High performance" plan, which is balanced plan by default. Then, click "Change plan settings" in the "High performance" plan, pop up the Edit Plan Settings interface, set "Turn off the display" as "Never", then click "Save changes" in the bottom. As shown in Figure 5-12. "Put the computer to sleep" may be displayed in the interface of different computer, it should also be set to "Never".

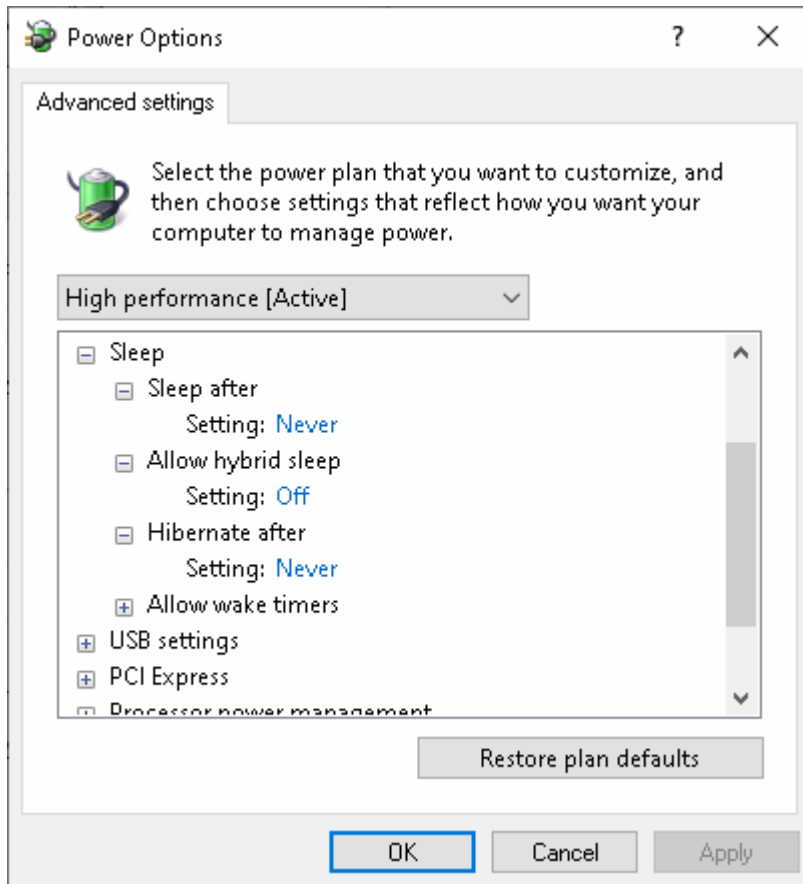


**Figure 5-12 Set power plan**

Click "Change advanced power settings" in Figure 5-12, pop up "Power Options" dialog box as shown in Figure 5-13.

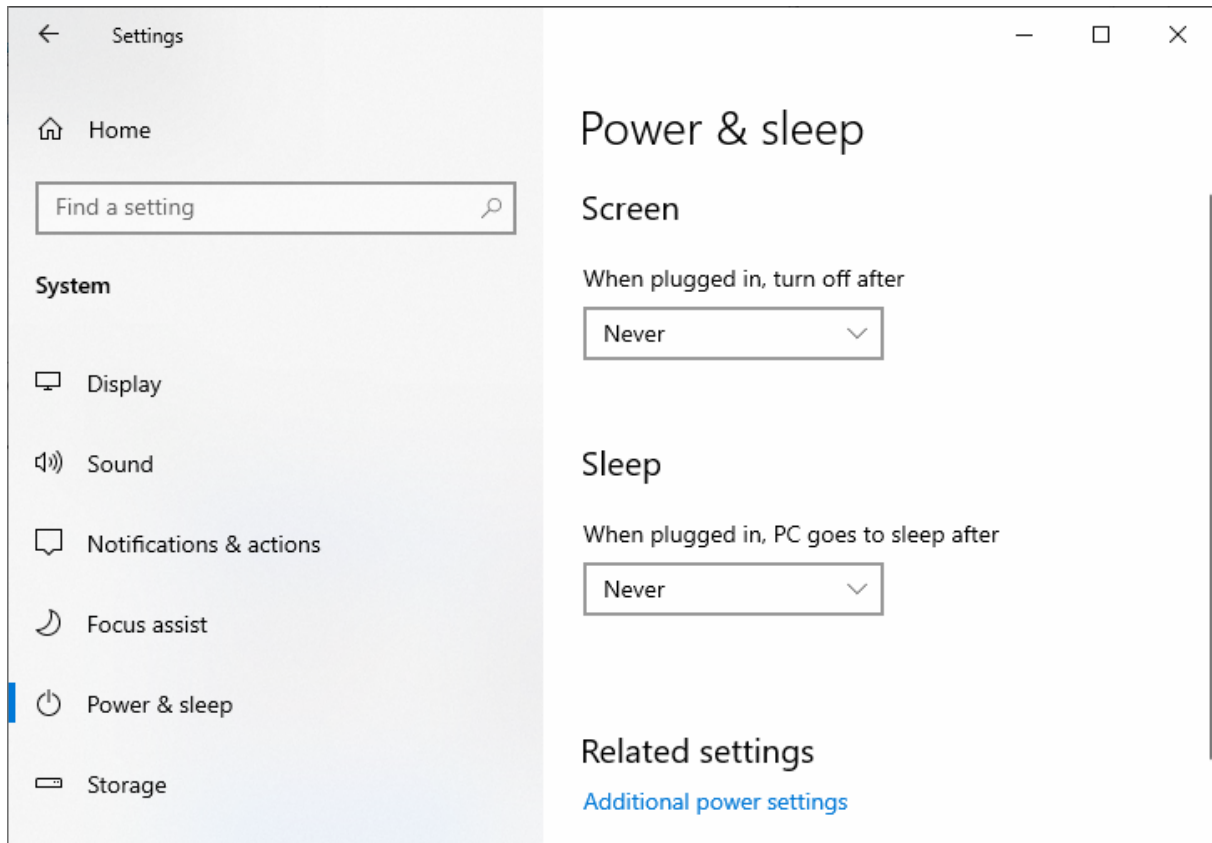
Set the sleep options as shown in the above figure: (The setting items that appear are related to the computer model, please refer to the actual interface.)

- Sleep: Never
- Allow hybrid sleep: Off
- Hibernate after: Never



**Figure 5-13 Set sleep options**

Then open “Setting” interface via start menu and select “System”. Choose “Power & Sleep” in system setting interface and set “Screen: When plugged in, turn off after” as “Never”, as shown in Figure 5-14. “Sleep: When plugged in, PC goes to sleep after” may be displayed in the interface of different computer, it should also be set to “Never”.



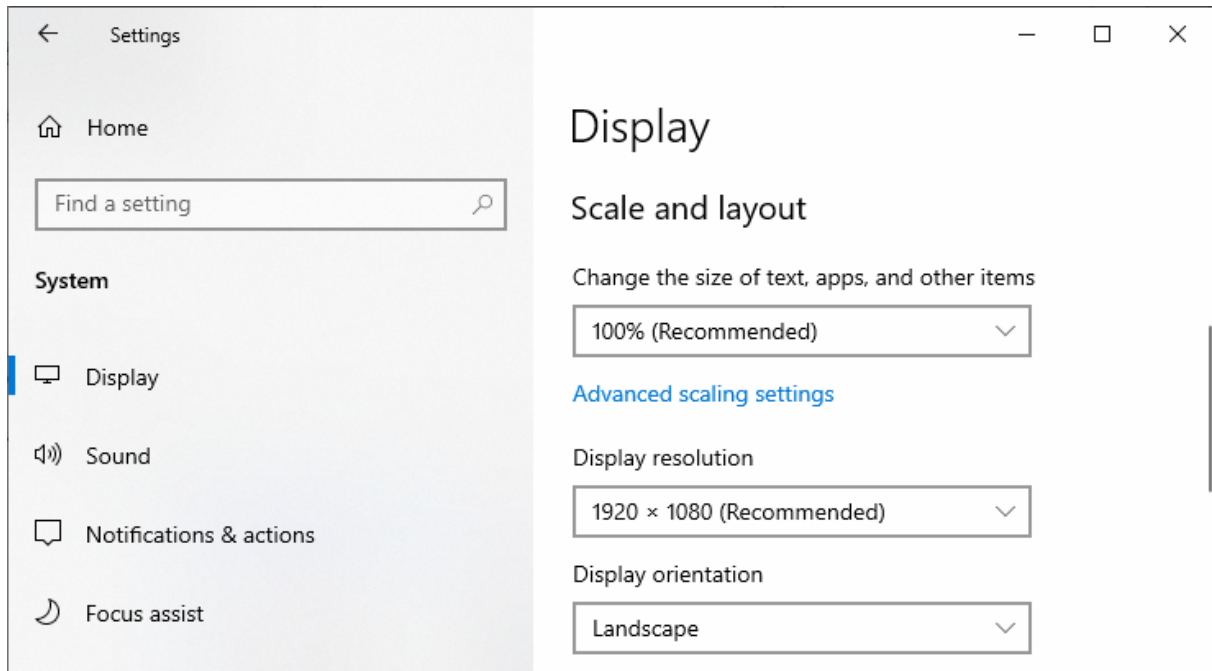
**Figure 5-14** Set screen never closed

### 5.2.5 Set screen resolution and refresh rate

Right click desktop, select “Display Settings” in the right-click menu and pop up the interface shown as Figure 5-15. Users can change the size of text, apps and other items. Select “100% (Recommended)” as suggested. Set orientation as “Landscape”.

Generally, screen resolution could be set as recommended.

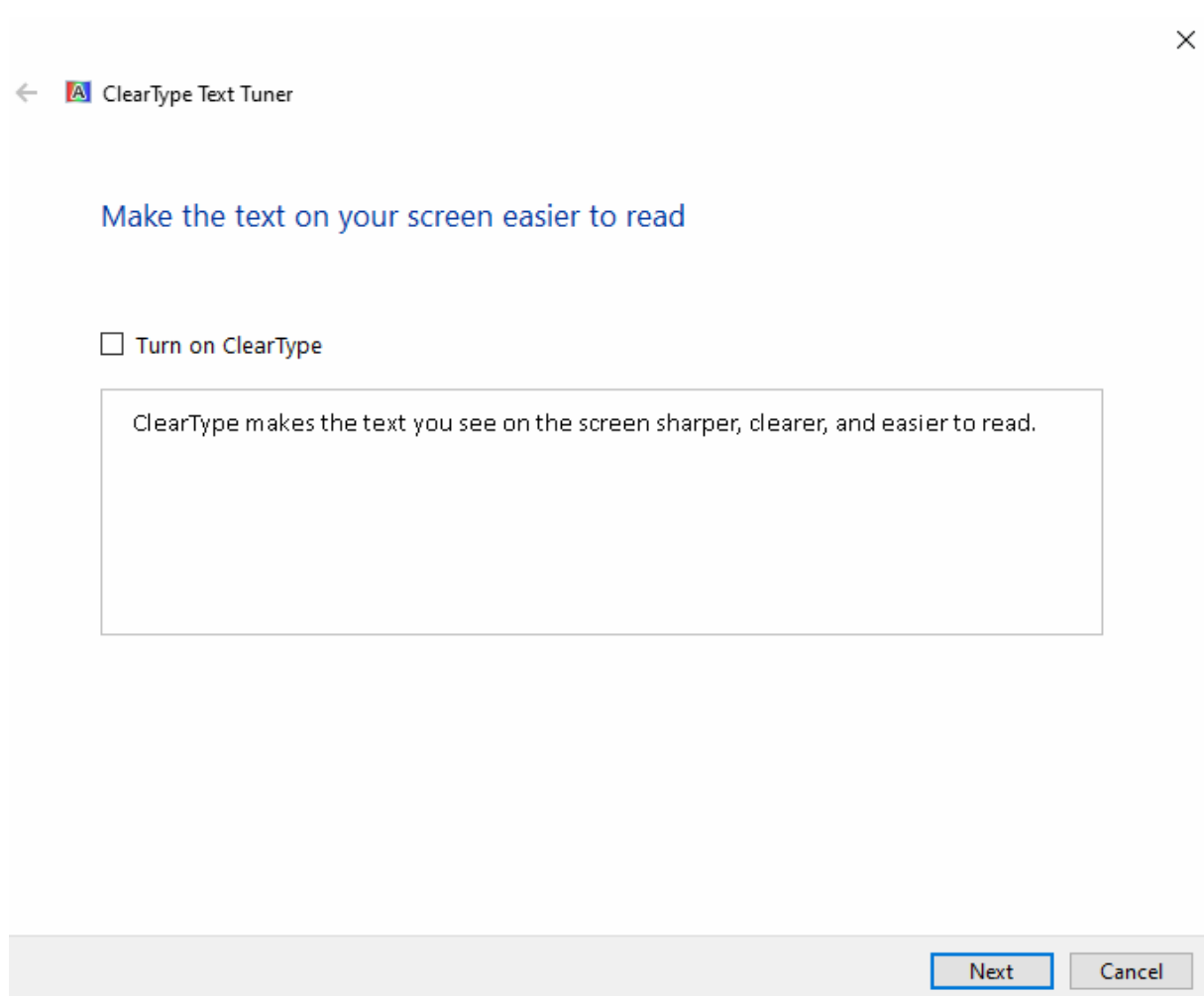
- 19” monitor: 1280 \* 1024 pixels (recommended)
- 20” monitor: 1600 \* 1200 pixels (recommended)
- 22” widescreen monitor: 1920 \* 1080 pixels (recommended)
- 24” widescreen monitor: 1920 \* 1080 pixels (recommended)



**Figure 5-15 Set screen resolution**

### 5.2.6 Turn off Clear Type text tuner

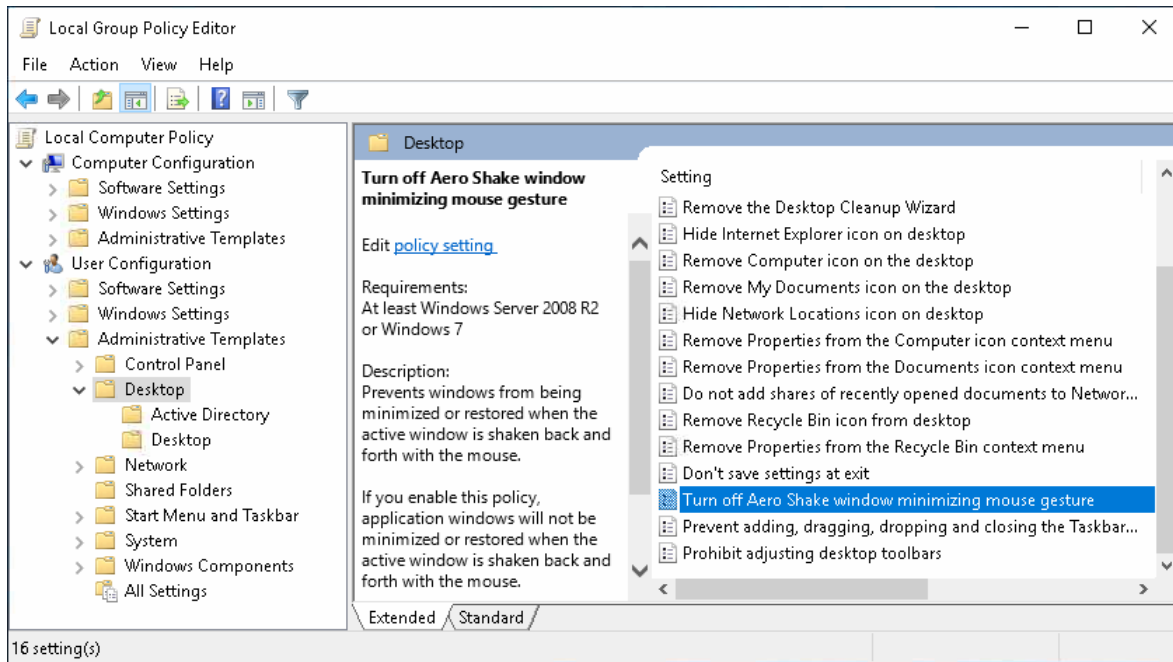
Click [Start/Windows System/Control Panel/Appearance and Personalization/ Fonts], select "Adjust ClearType text" in the menu, open the interface as shown in Figure 5-16. Unselect "Turn on ClearType", and click "Next" until "Finish".



**Figure 5-16** Turn off Clear Type

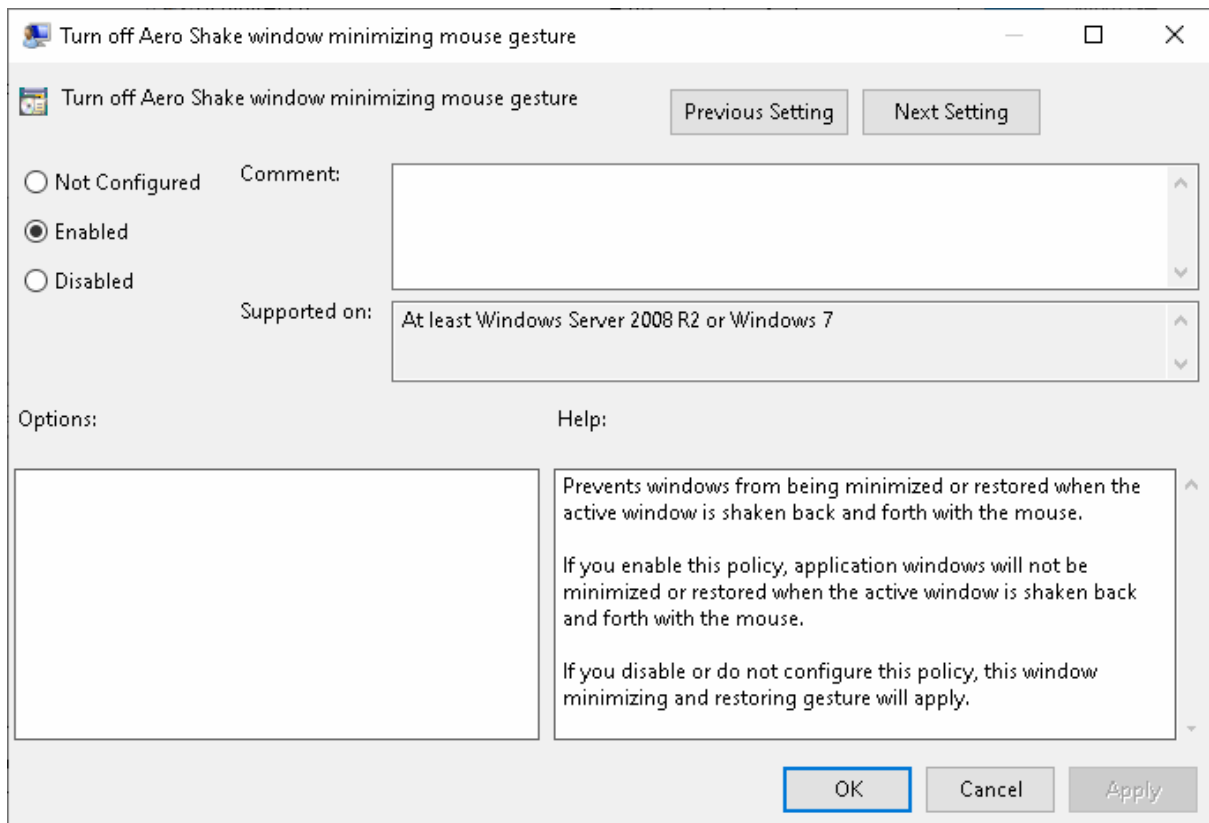
### 5.2.7 Turn off Aero Shake window minimizing mouse gesture

Open “Run” interface by shortcut key “Windows + R”, then type command “gpedit.msc” in Run dialog box and click “OK”. Click [User Configuration/Administrative Templates/Desktop] in Local Group Policy Editor, as shown in Figure 5-17.



**Figure 5-17 Local group policy editor**

Double click “Turn off Aero Shake window minimizing mouse gesture”, and select “Enabled” in the pop-up dialog box, as shown in Figure 5-18, click “OK” to end.

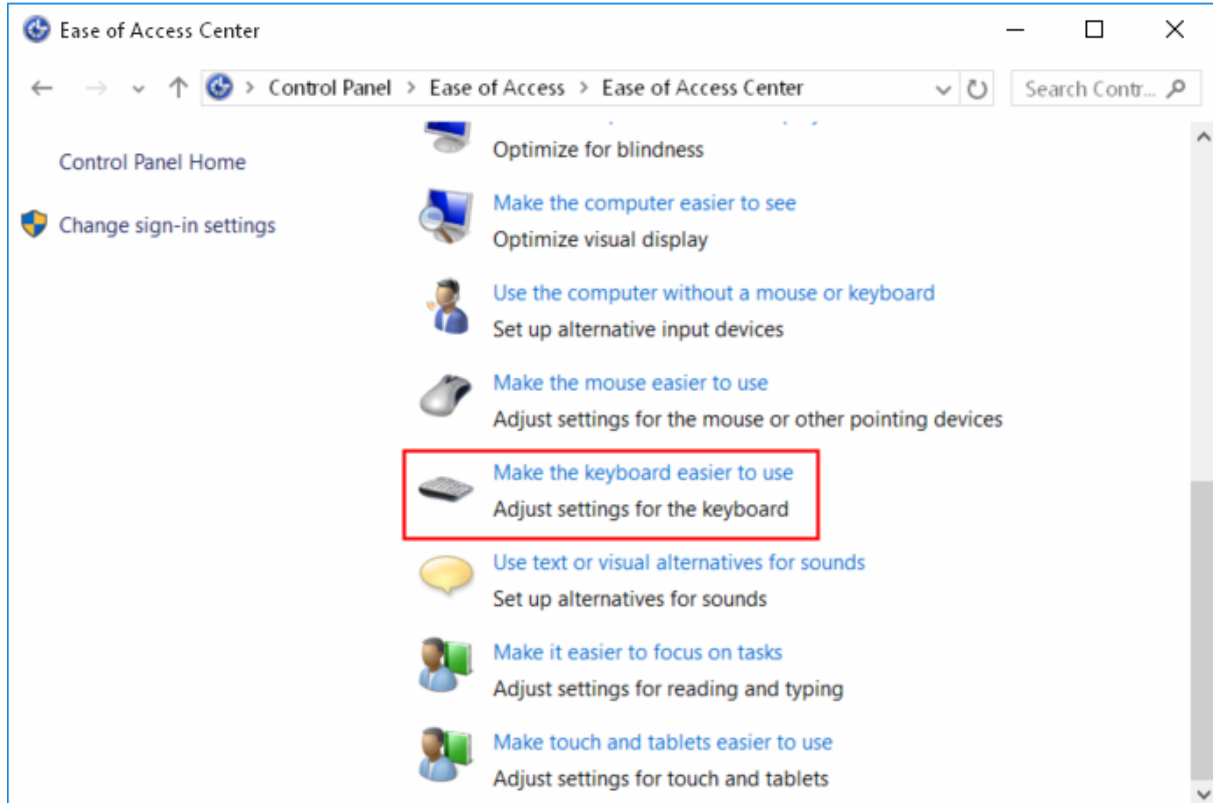


**Figure 5-18 Turn off Aero Shake window minimizing mouse gesture**



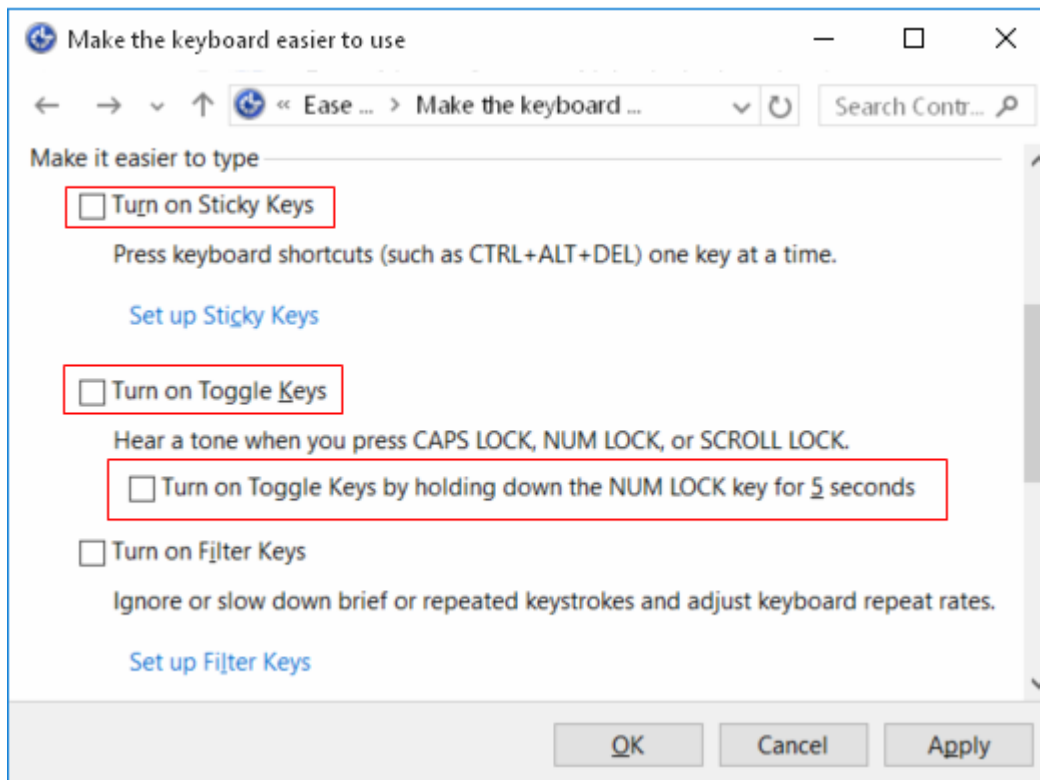
### 5.3 Turn off Sticky Keys and Toggle Keys

Open [Start/ Windows system/Control panel], click [Ease of Access/Ease of Access Center], click "Make the keyboard easier to use", the figure shown as follows.



**Figure 5-19 Ease of access center**

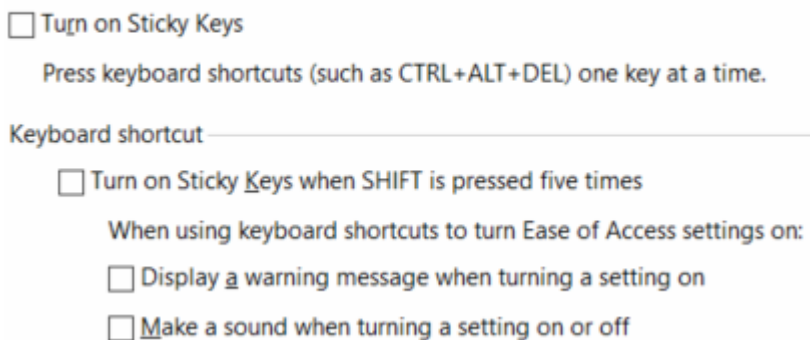
Unselect "Turn on Sticky Keys", "Turn on Toggle Keys" and "Turn on Toggle Keys by holding down the NUM LOCK key for 5 seconds", as shown in Figure 5-20.



**Figure 5-20 Turn off sticky keys and toggle keys**

Click "Set up Sticky Keys", and set as shown in Figure 5-21.

### Set up Sticky Keys

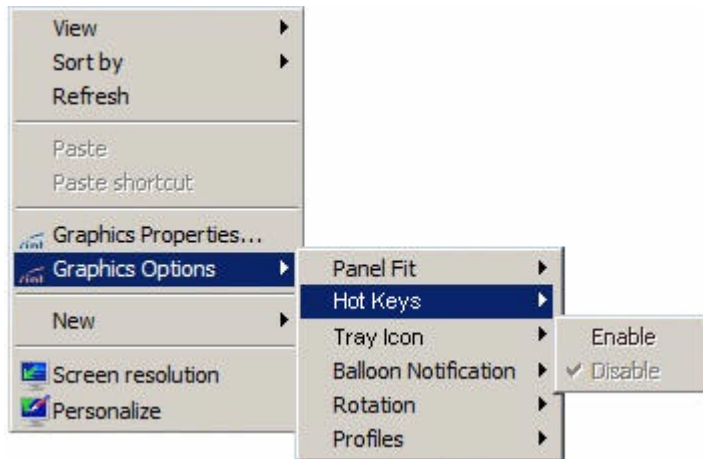


**Figure 5-21 Turn off keyboard shortcut**

## 5.4 Turn off Hot Keys of Rotating Screen

If integrated display card is used in computer (such as Lenovo TS140), and the hot keys of rotating screen should be disabled, operation: right click any blank in desktop, and pop up the menu as shown in Figure 5-22, select [Graphics Options/Hot Keys/Disable].

If there is not menu as shown in Figure 5-22, and jump over this setting.



**Figure 5-22** Turn off hot keys of rotating screen

## 5.5 Taskbar and Start Menu Properties

Right click taskbar, and select “Taskbar settings” in the right-click menu, pop up the properties settings dialog box, as shown in Figure 5-23.

Set “Lock the taskbar” and “Use small taskbar buttons” as On, set “Automatically hide the taskbar” in desktop mode and tablet mode as Off, and set “bottom” for “Taskbar location on screen” and “Never” for “Combine Taskbar buttons”, as shown in Figure 5-23.

## Taskbar

Lock the taskbar



Automatically hide the taskbar in desktop mode



Automatically hide the taskbar in tablet mode



Use small taskbar buttons



Use Peek to preview the desktop when you move your mouse to the Show desktop button at the end of the taskbar



Replace Command Prompt with Windows PowerShell in the menu when I right-click the start button or press Windows key+X



Show badges on taskbar buttons



Taskbar location on screen



Combine taskbar buttons



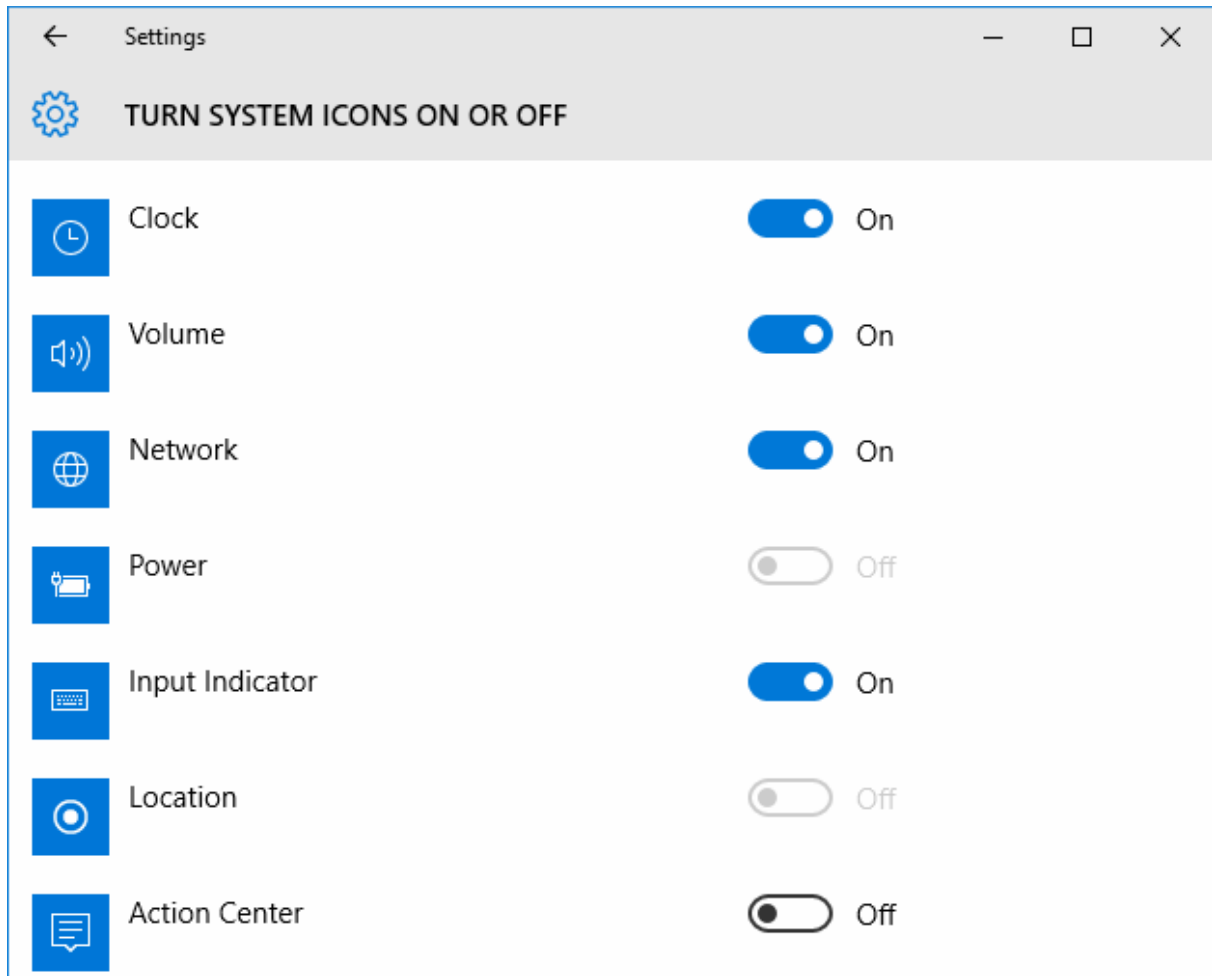
## Notification area

[Select which icons appear on the taskbar](#)

[Turn system icons on or off](#)

**Figure 5-23 Taskbar properties settings**

Click “Turn system icons on or off” in Figure 5-23, pop up “Turn System Icons On or Off” interface, as shown in Figure 5-24, set “Off” for “Action Center”, others are the default.



**Figure 5-24 System icons settings**

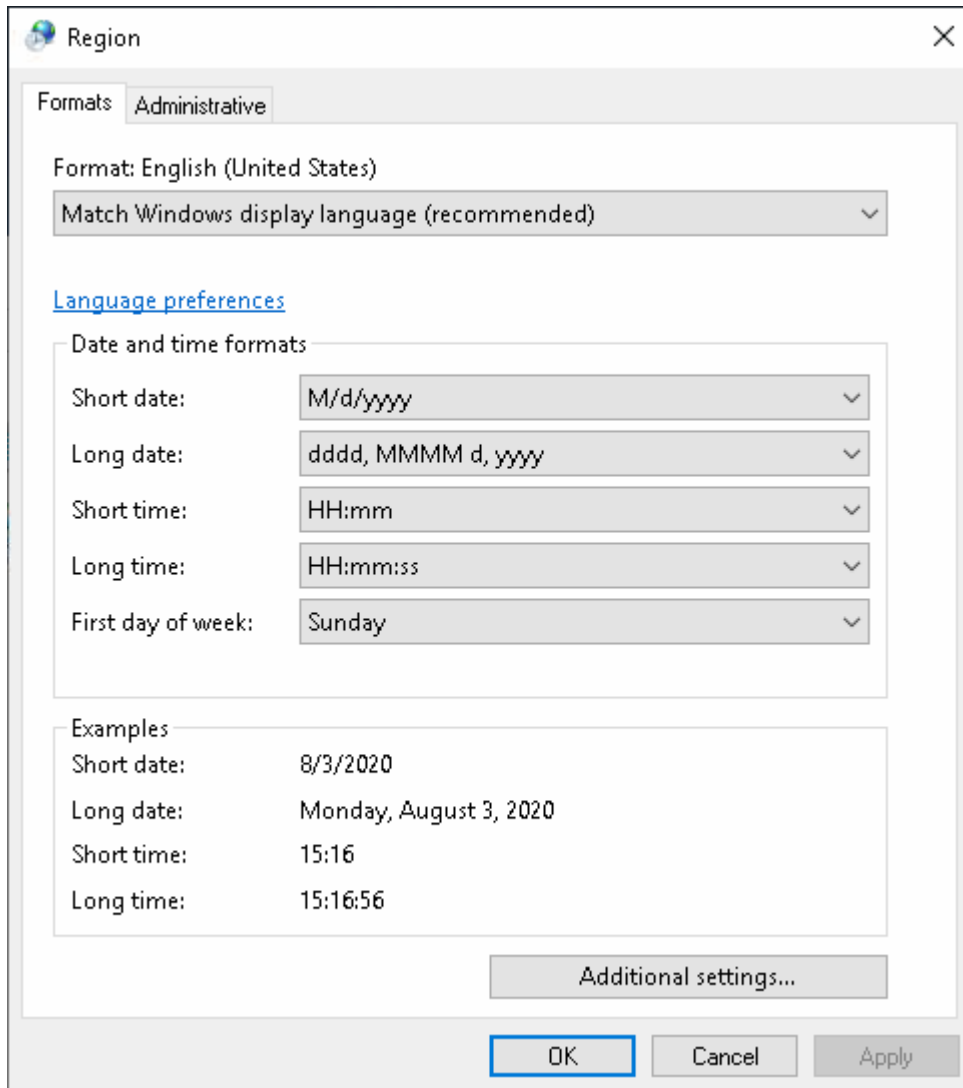
## 5.6 Time Settings

Select [Control Panel/Clock and Region] and click “Date and Time” to set time zone, data and time which remain default usually.

Click “Region” in “Clock and Region” interface, pup up the figure shown in Figure 5-25.

Set as follow introduction:

- Short time: HH:mm
- Long time: HH:mm:ss
- Short data: M/d/yyyy
- Long data: dddd, MMMM dd, yyyy



**Figure 5-25 Region and language options**

Then click “OK” to finish the settings.

## 5.7 System and Security Settings

### 5.7.1 Security and maintenance settings

Select [Control Panel/System and Security/Security and Maintenance/Change Security and Maintenance Settings], deselect all options in the pop-up interface, as shown in Figure 5-26.

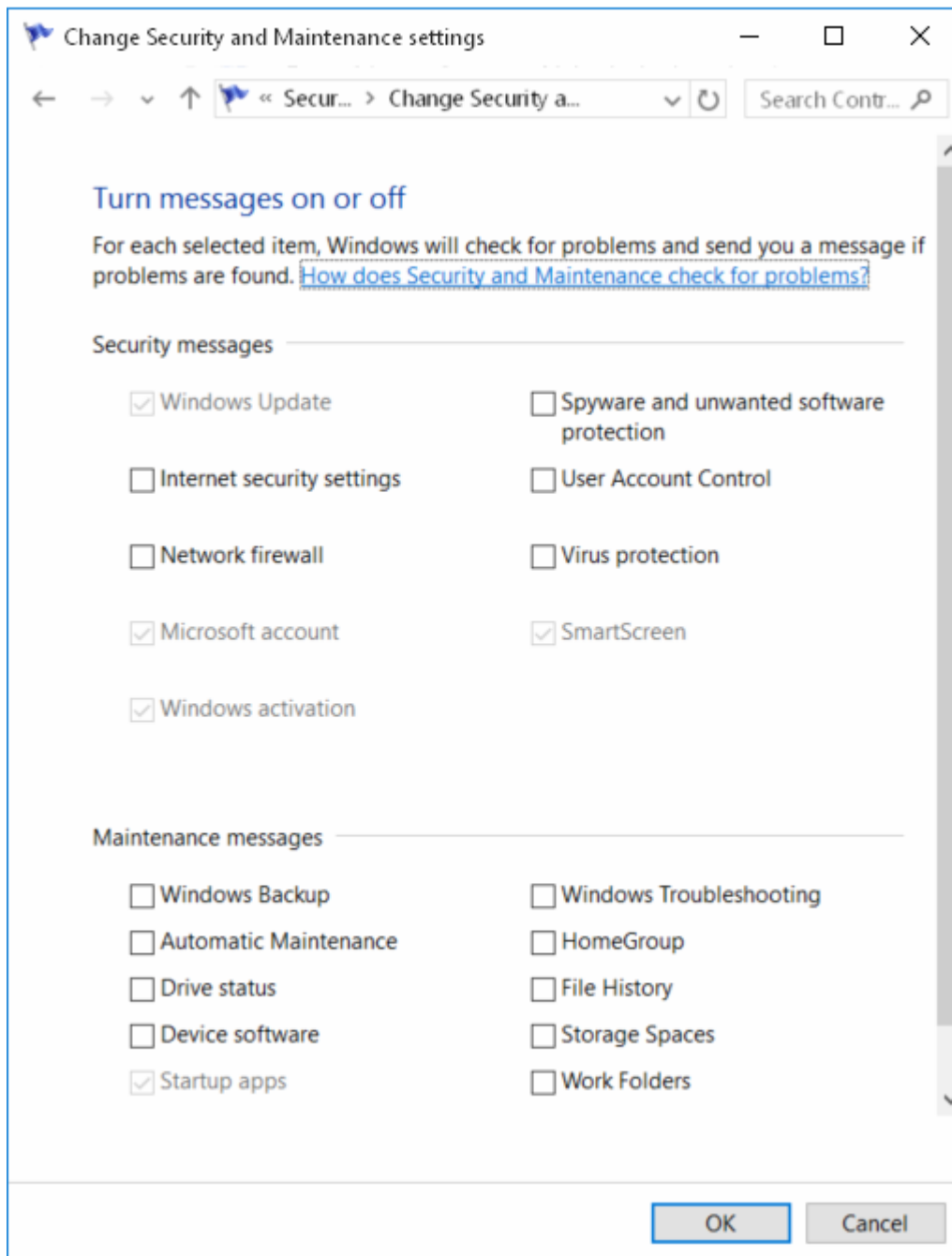
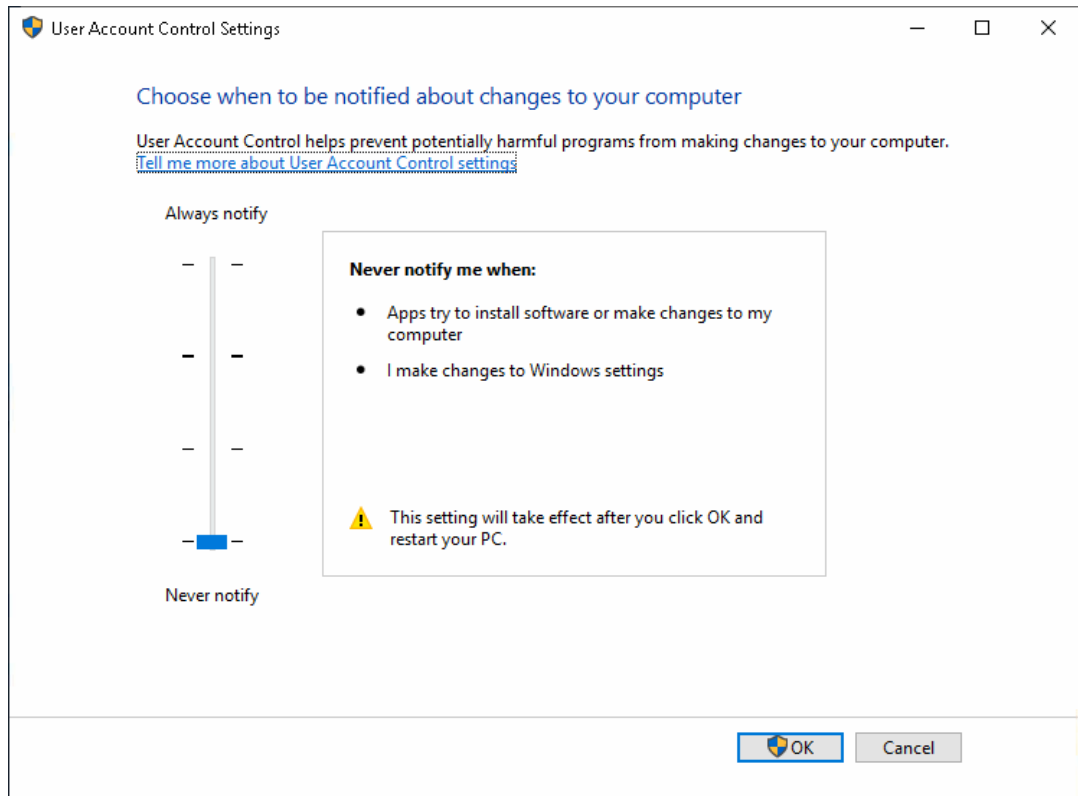


Figure 5-26 Change security and maintenance settings

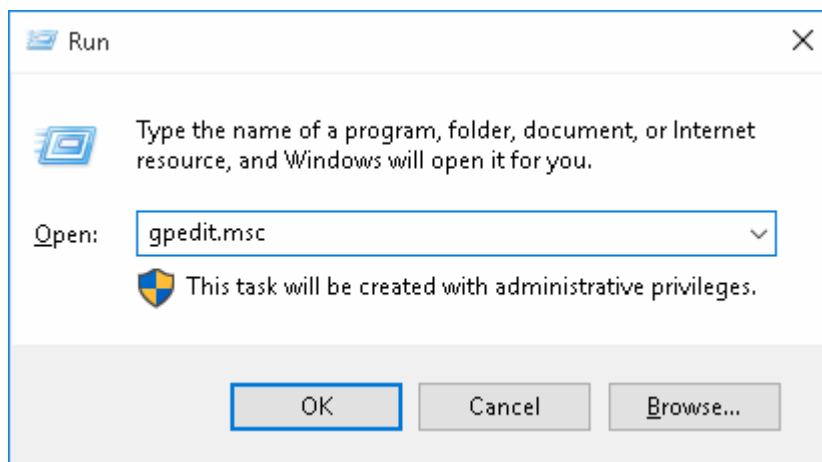
### 5.7.2 User accounts control settings

- 1) Select [Control Panel/System and Security/Security and Maintenance], then click "Change User Account Control settings", pop up the interface shown as Figure 5-27. Set "Allow notify" to "Never notify" by pulling down the scroll button to the bottom.



**Figure 5-27 User account control settings**

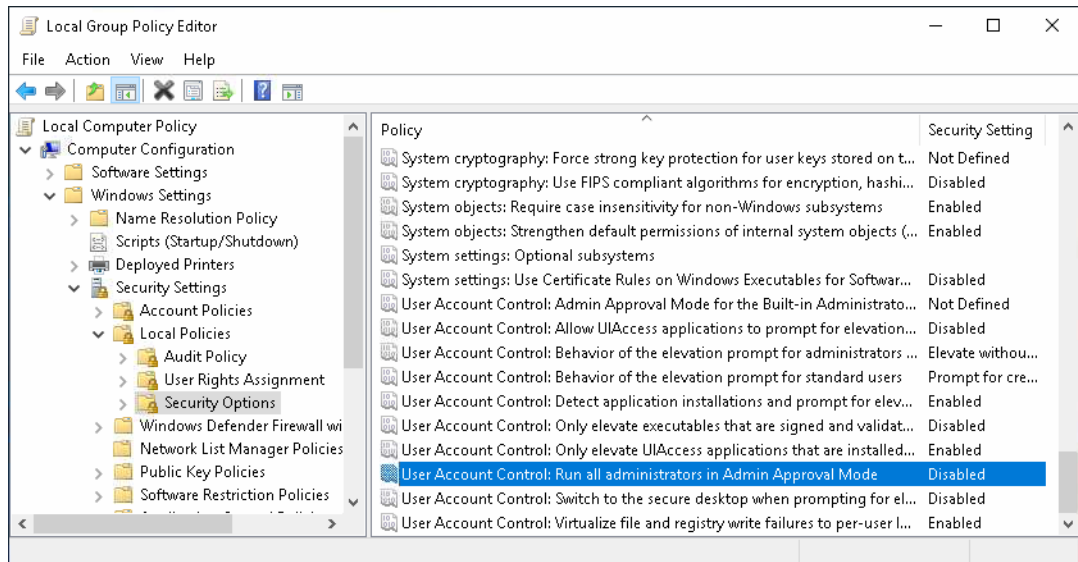
- 2) Open "Run" interface by shortcut key "Windows + R", then type command "gpedit.msc" in Run dialog box, as shown in the following figure.



**Figure 5-28 Run dialog box**

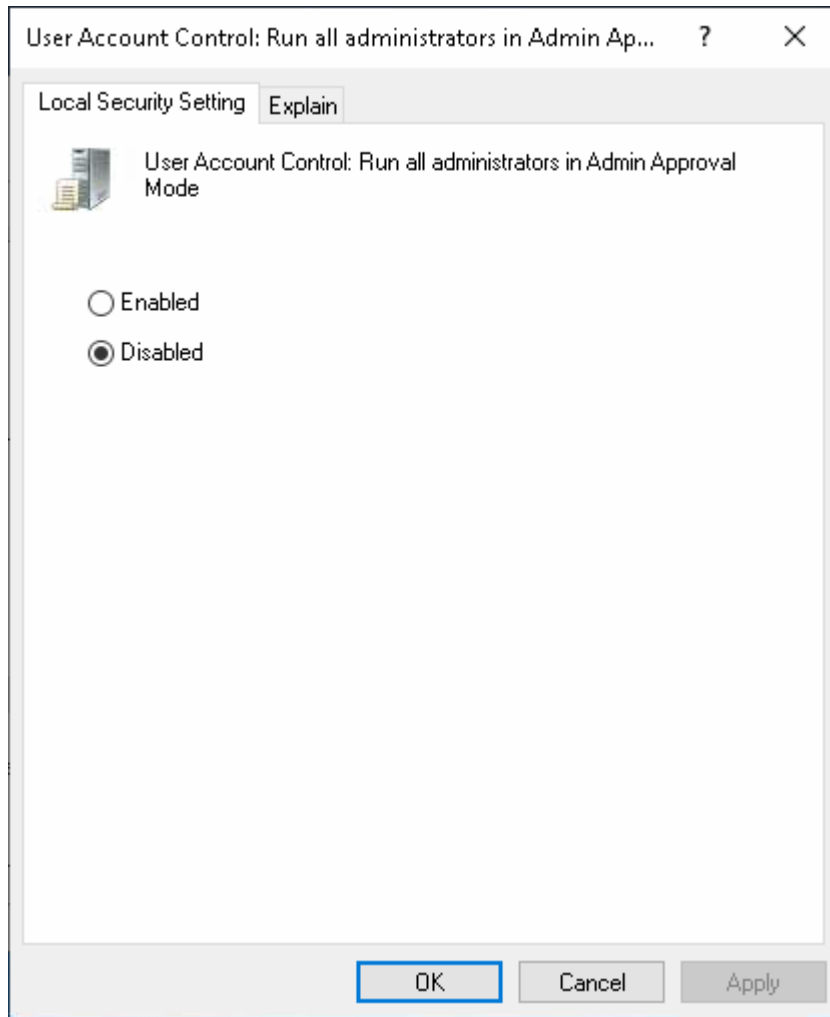
- 3) Click "OK" to pop up the "Local Group Policy Editor" interface, extend "Computer Configuration", select "Windows Settings/ Security Settings/ Local Policies/ Security Options", as shown in the following figure.





**Figure 5-29 Change setting in Local Group Policy Editor**

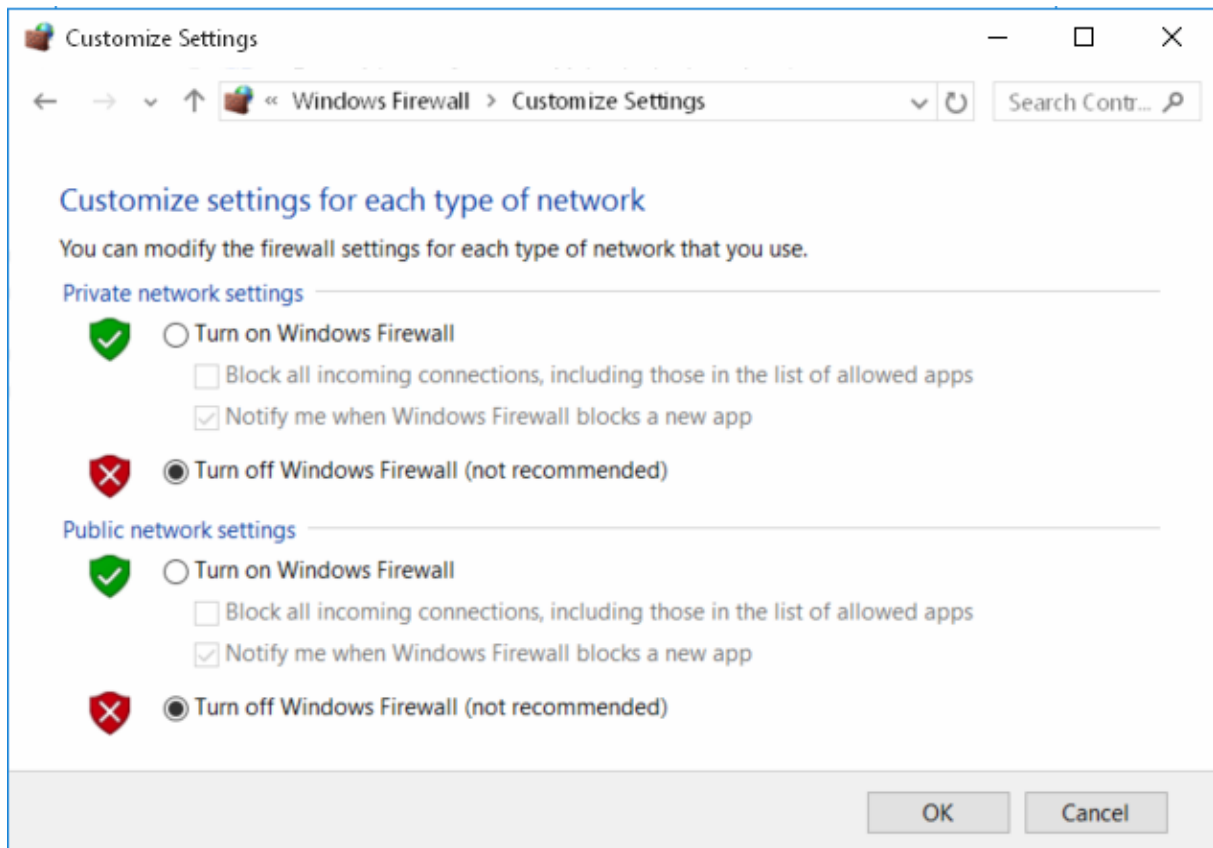
- 4) Double-click "User Account Control: Run all administrators in Admin Approval Mode" in the right interface to open the dialog box, and set as "Disabled", as shown below. Then select "Disabled", click "Apply" and "OK", the change will take effect after restarting the computer.



**Figure 5-30** *Disable the user account control property*

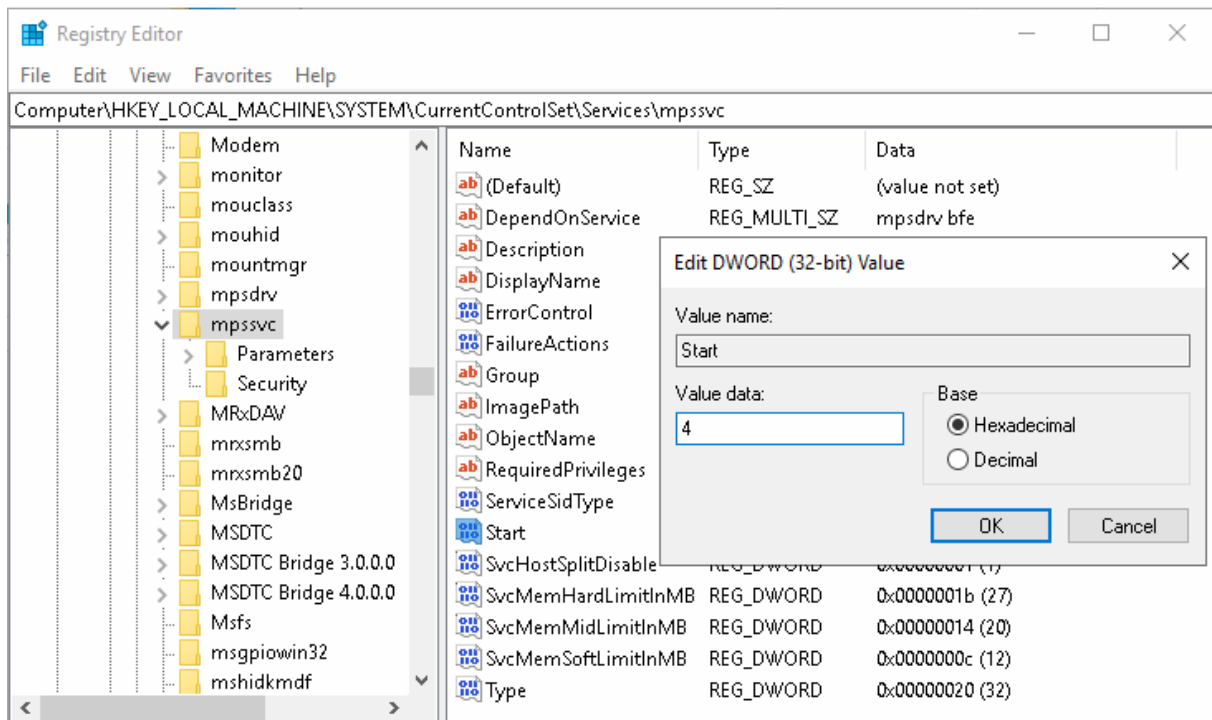
### 5.7.3 Turn off Windows firewall

Select [Control Panel/System and Security/Windows Defender Firewall], then click “Turn Windows Defender Firewall on or off”. Turn off firewall of each network, as shown in Figure 5-31.



**Figure 5-31 Windows firewall settings**

Select [Start/ Windows Administrative Tools/ Registry Editor] to open the interface of Registry Editor, select "HKEY\_LOCAL\_MACHINE/ SYSTEM/ CurrentControlSet/ Services/ mpssvc" on the left and find the parameter Start on the right. Double-click Start to set the value from 2 to 4, as shown in Figure 5-32. Then, restart the computer. (Please do not modify other parameters in the registry editor without proper knowledge and expertise.)

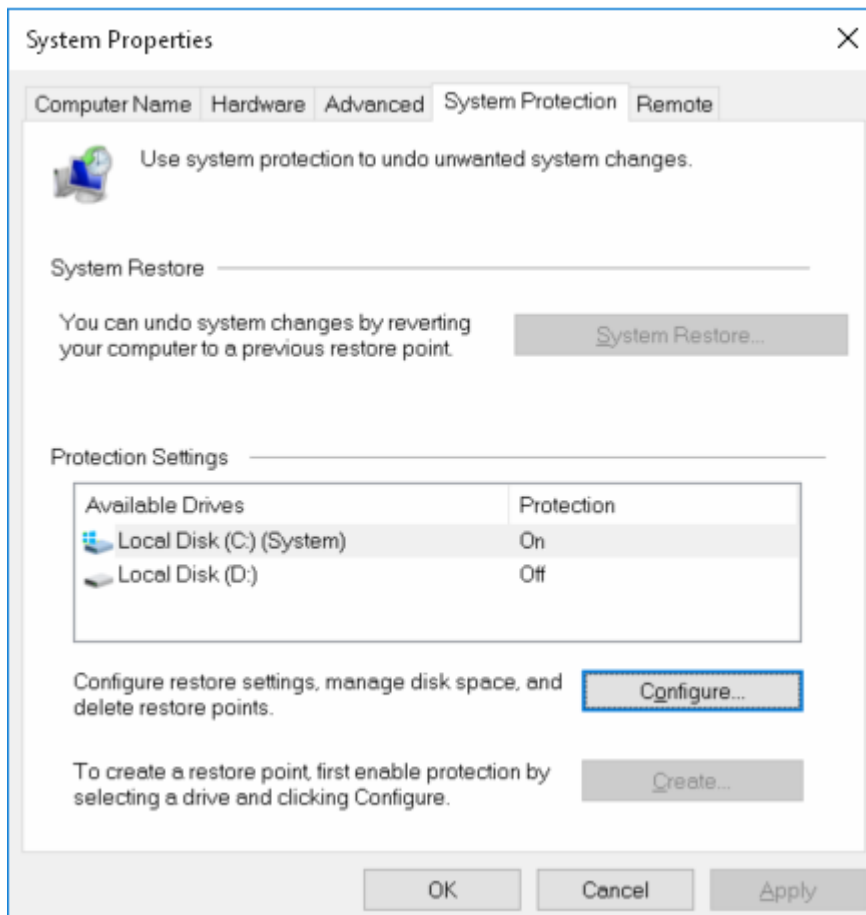


**Figure 5-32 Modify the parameter of registry**

Select [Start/ Windows Administrative Tools/ Services] to check whether the Windows Defender Firewall service is disabled.

#### 5.7.4 Turn off system restore

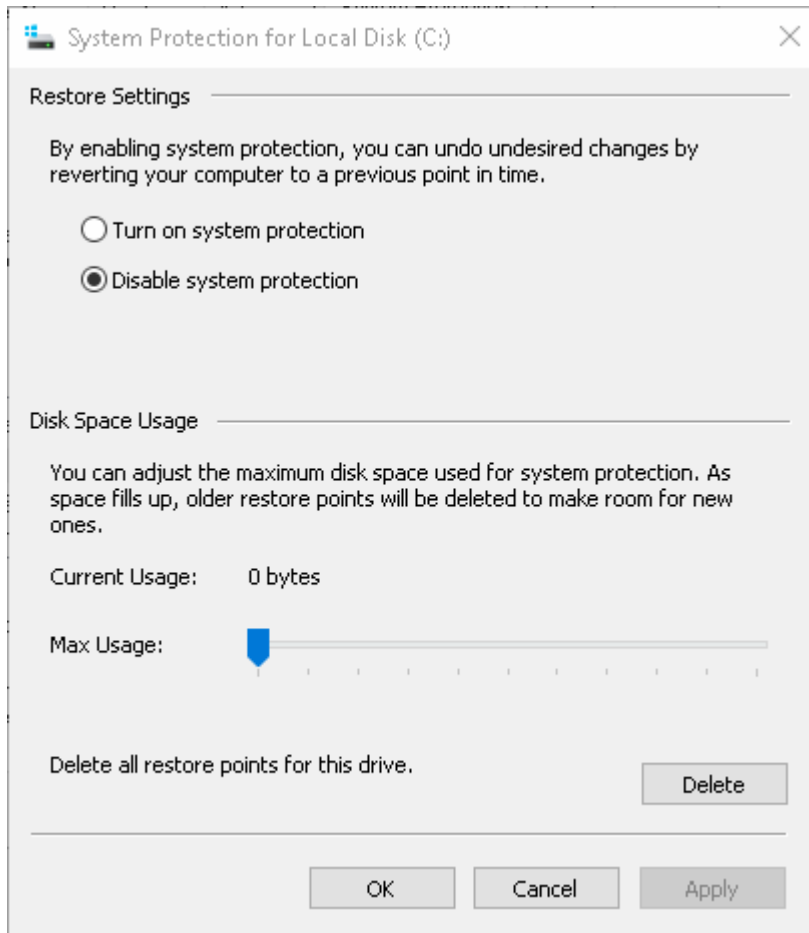
Select [Control Panel/System and Security/System], then click "System Protection", pop up the system properties interface shown as Figure 5-33.



**Figure 5-33** Dialog box of system properties

Select the drive(s) which have opened system protection in the interface and click “Configure” to close the system protection.

Select local disk C: with protection “On”, and click “Configure” in “System Properties” option page, pop up the dialog box shown as Figure 5-34, select “Disable system protection”.

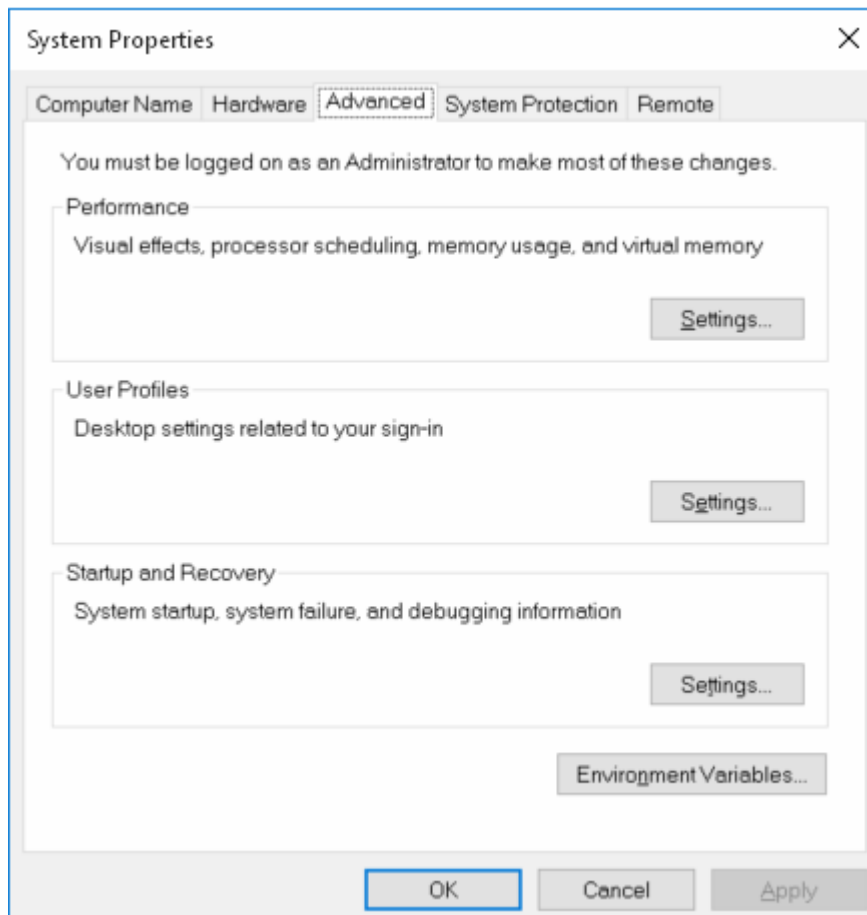


**Figure 5-34 Turn off the protection of disk C:**

Click "OK" to turn off the protection of disk C.

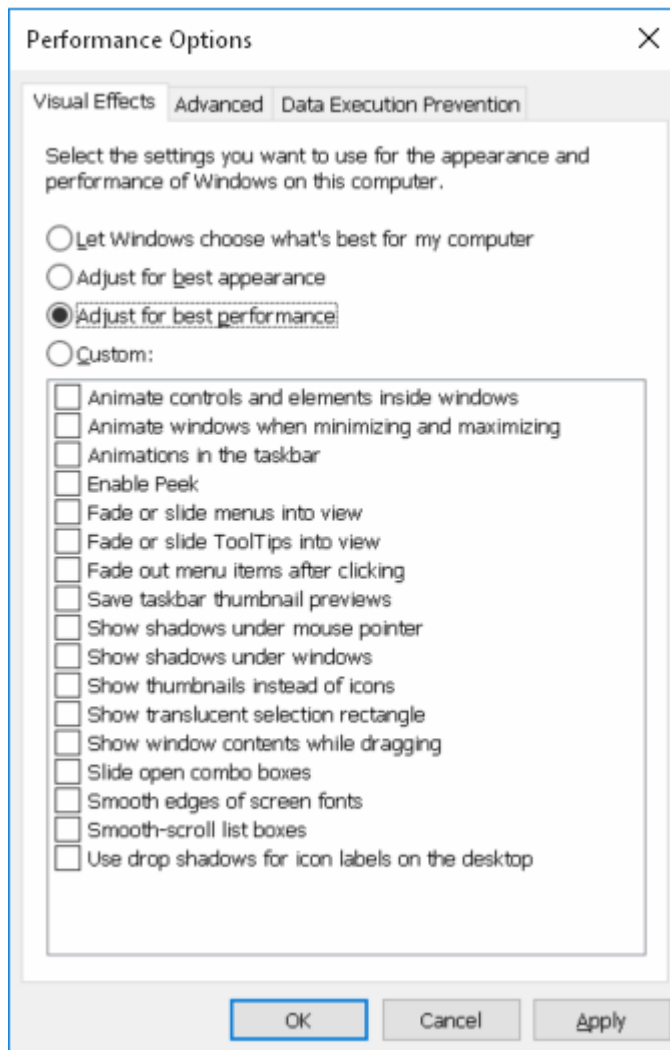
### 5.7.5 Performance options settings

- 1) Select "Advanced" option page in the system properties interface, as shown in Figure 5-35.



**Figure 5-35** Dialog box of Advanced settings of system properties

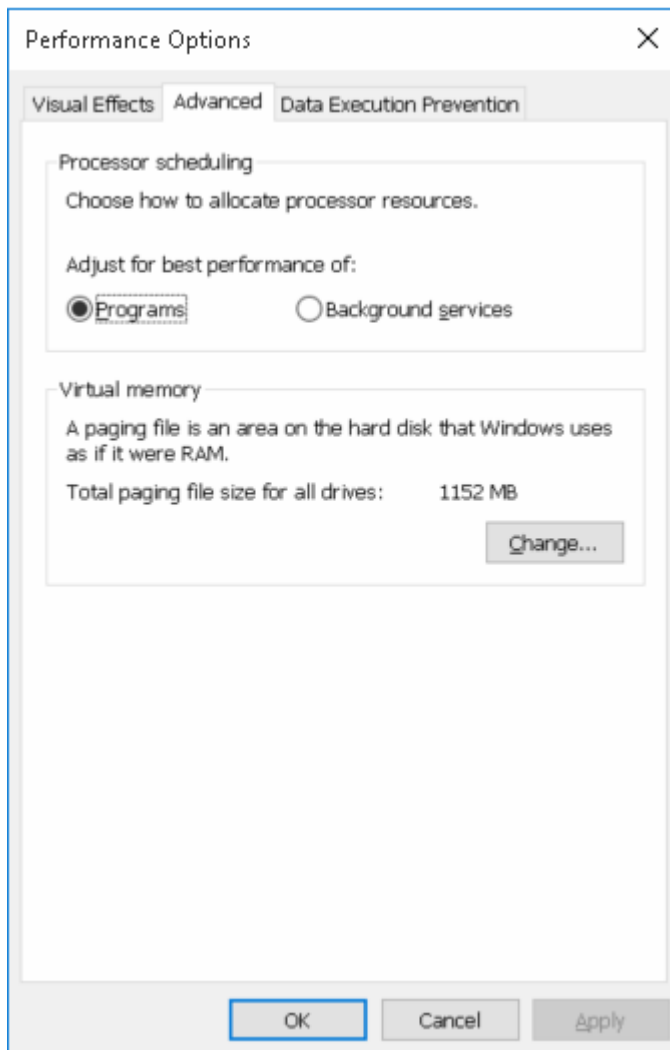
- 2) Click “Settings” in “Performance” window, pop up “Performance Options” interface, as shown in Figure 5-36.



**Figure 5-36 Select “Adjust for best performance”**

- 3) Select “Adjust for best performance” in “Visual Effects” option page, then select “Advanced” option page, advanced properties interface is shown in Figure 5-37.

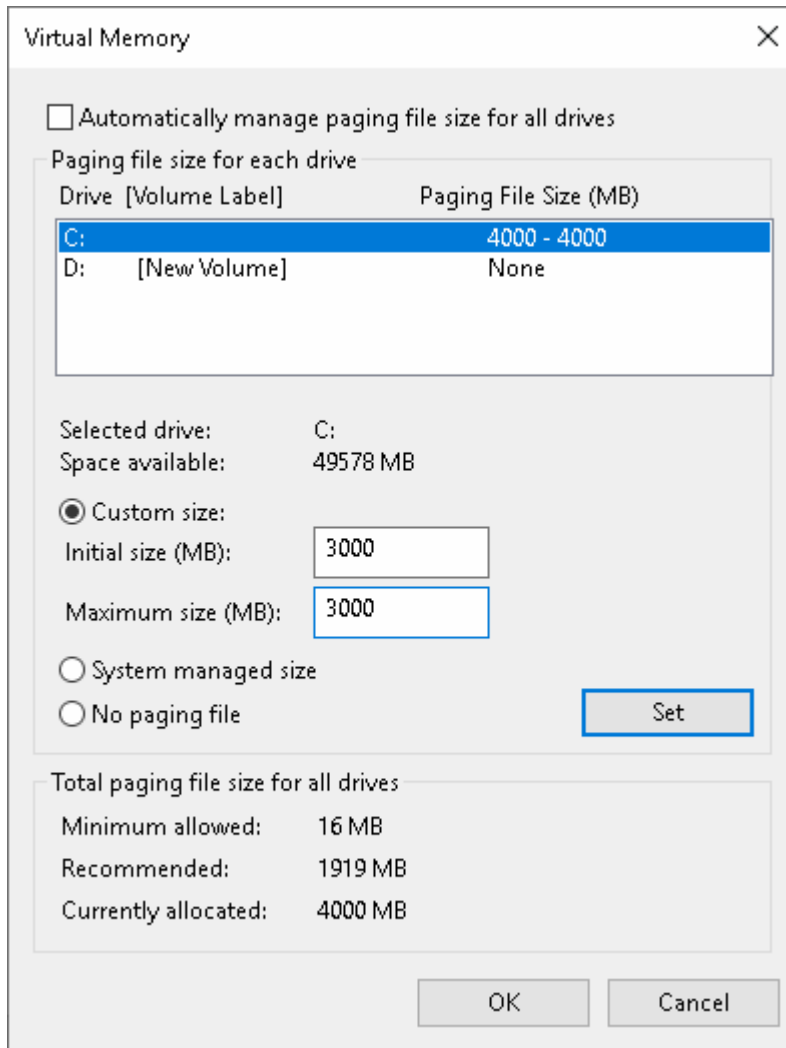




**Figure 5-37** Dialog box of advanced settings of performance options

- 4) Click “Change” in “Virtual memory” window, pop up virtual memory setting interface.

Deselect “Automatically manage paging file size for all drives”, and select “Custom size”, set the value of “Initial size” and “Maximum size” to 3000MB (4000MB when the RAM is larger than 2GB), as shown in Figure 5-38.



**Figure 5-38 Set virtual memory**

- 5) Click “Set” then set “OK” to save the change.

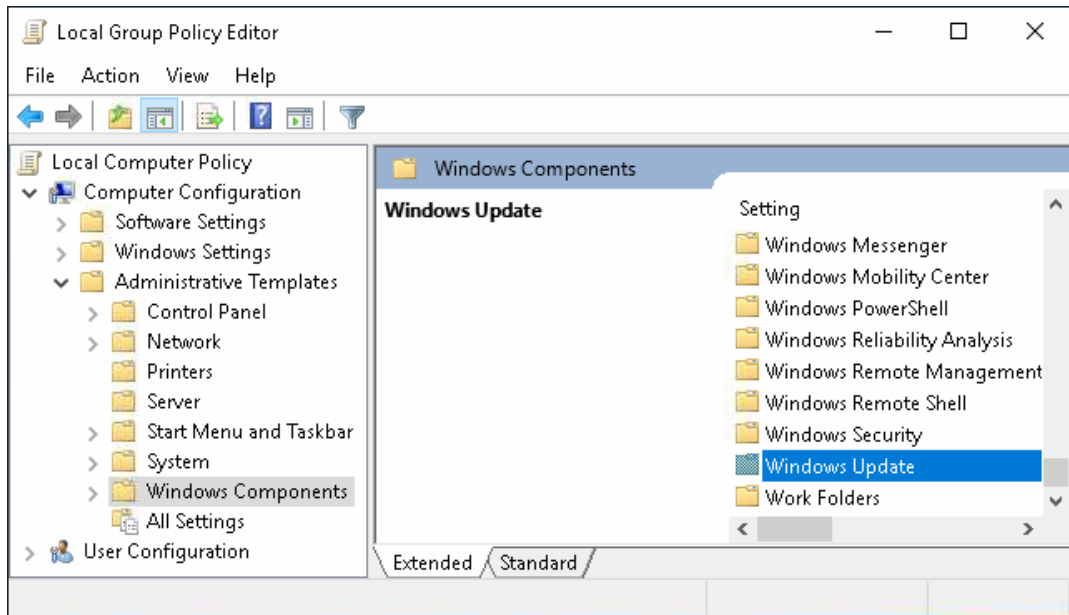


**Tip:**

If system pops up property dialogue box of “The changes you have made require you to restart your computer before they can take effect”, please click “OK” and restart the computer, then set following properties.

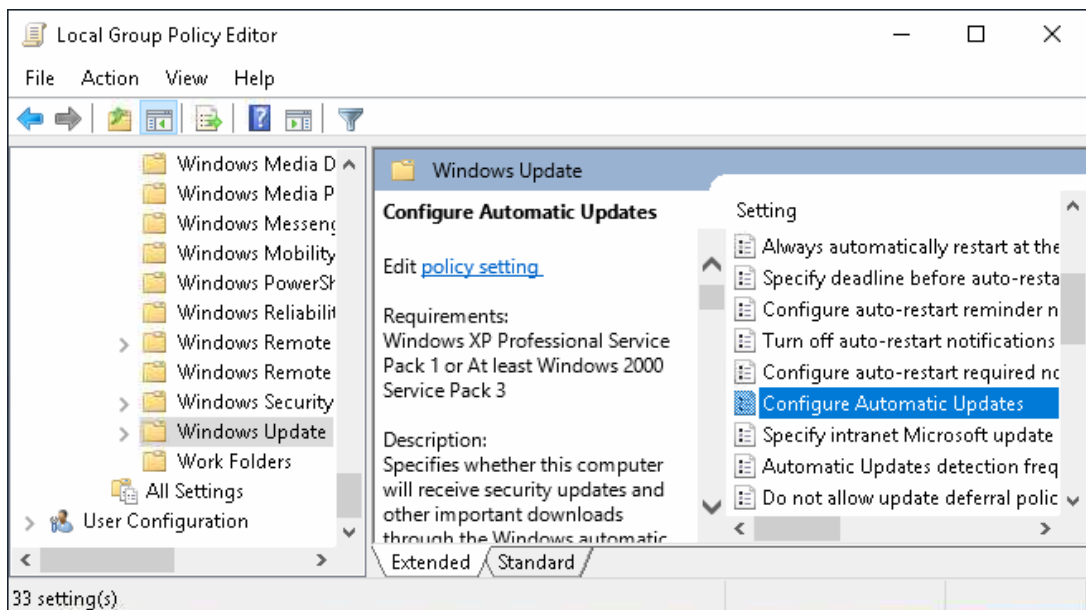
### 5.7.6 Turn off auto-update

- 1) Open “Run” interface by shortcut key “Windows + R”, then type command “gpedit.msc” in Run dialog box and click “OK”. Click [Computer Configuration/Administrative Templates/Windows Components] in Local Group Policy Editor, as shown in Figure 5-39.



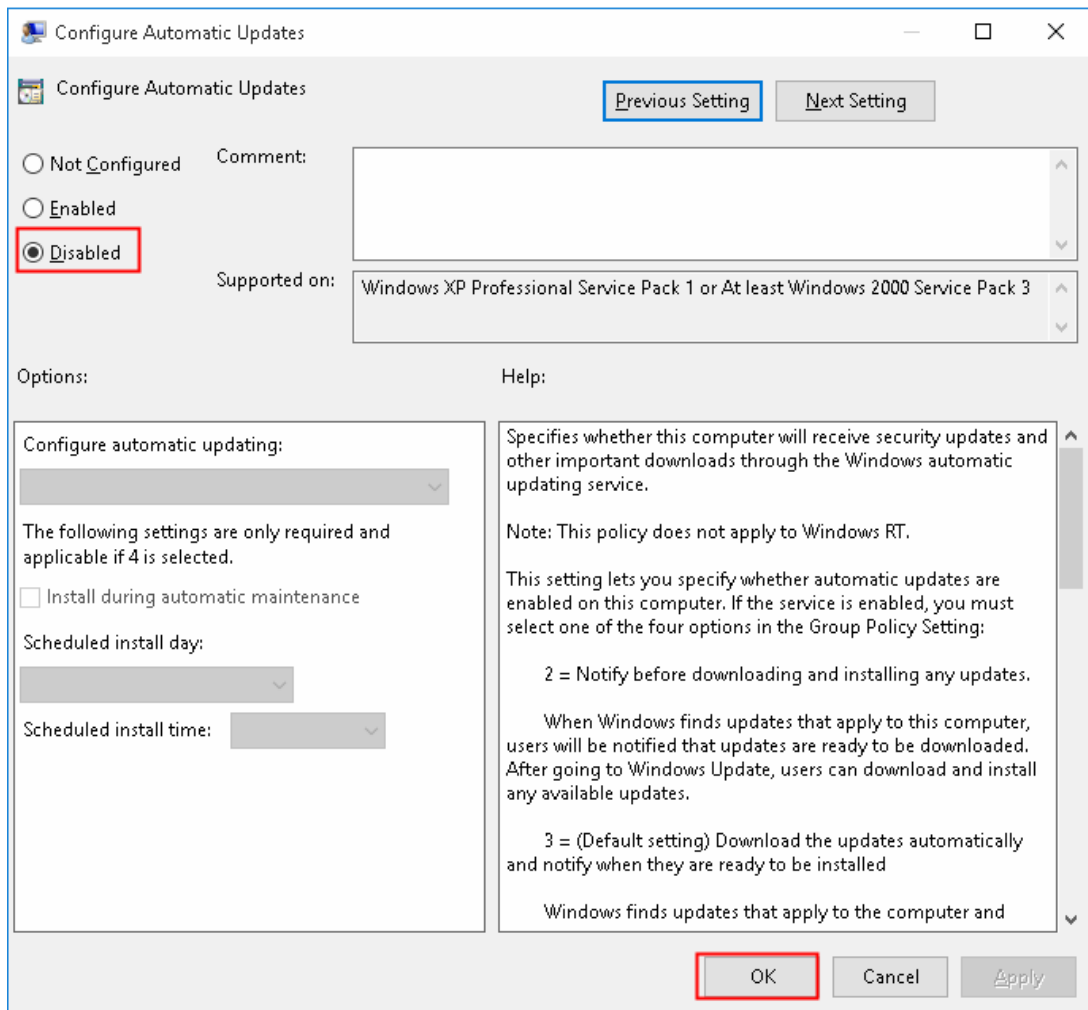
**Figure 5-39 Local group policy editor interface**

- 2) Double click “Windows update” in “Windows component” list and pop up the interface shown as Figure 5-40.



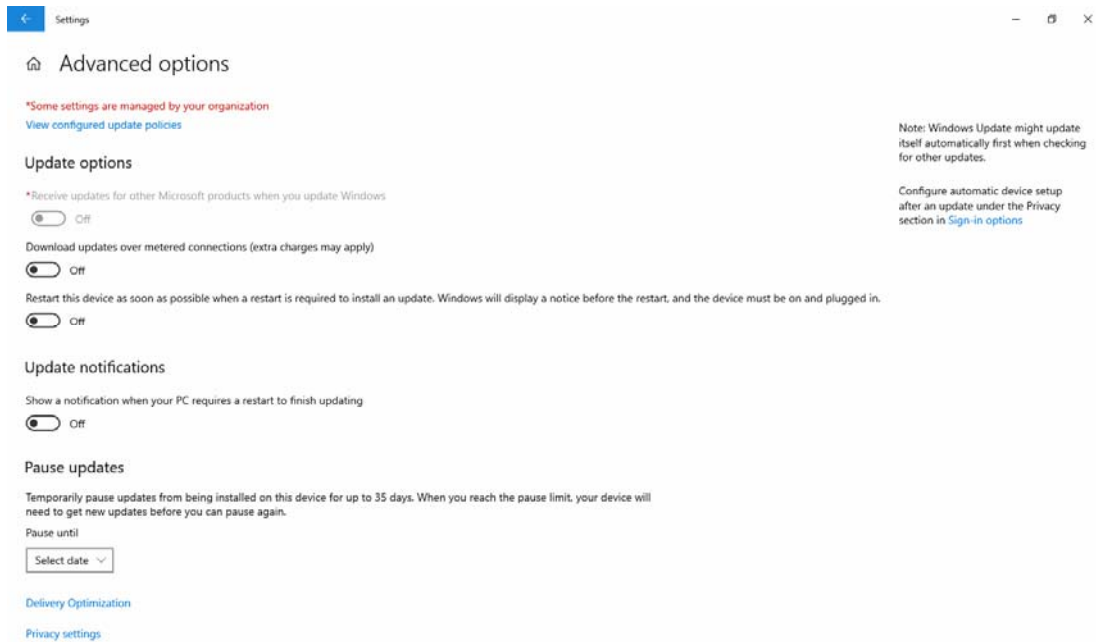
**Figure 5-40 Windows update interface**

- 3) Double click “Configure Automatic Updates” in “Windows update” interface and pop up the interface shown as Figure 5-41. Select “Disabled” and click “OK”, the change will take effect after restarting the computer.



**Figure 5-41 Turn off auto-update**

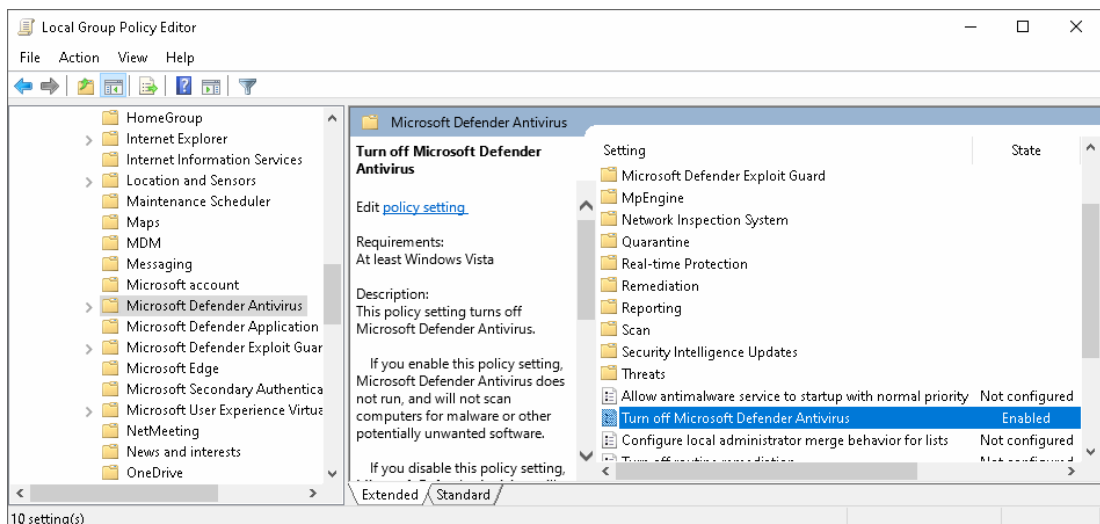
After closing the auto-update setting interface, select "Start/ Settings/ Windows Update/ Advanced options", or enter "Advanced Windows Update options" in the search box in the upper left corner and press Enter, and then the Windows update options interface pops up, as shown in Figure 5-42.



**Figure 5-42 Auto-update interface**

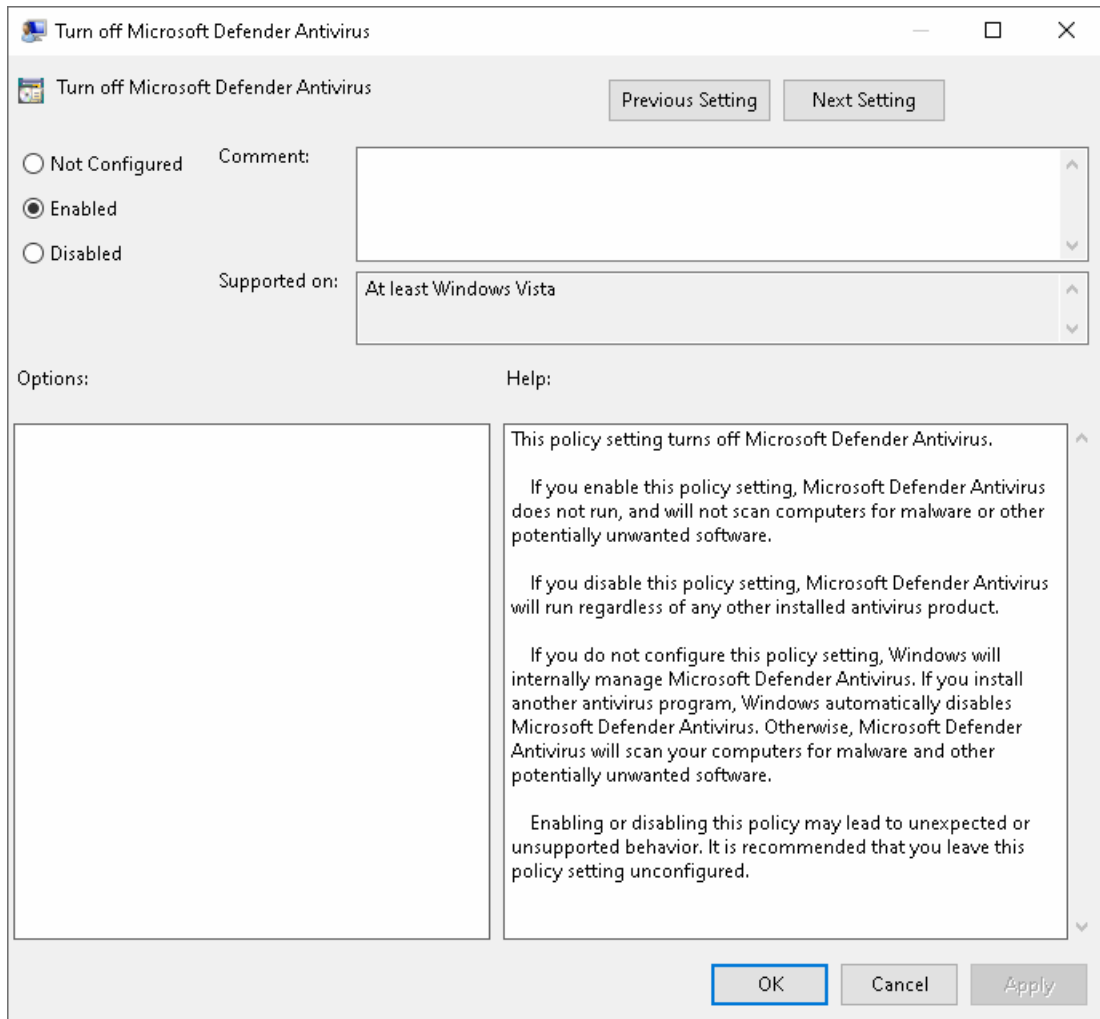
### 5.7.7 Turn off Microsoft Defender Antivirus

- 1) Open “Run” interface by shortcut key “Windows + R”, then type command “gpedit.msc” in Run dialog box and click “OK”. Click [Computer Configuration/Administrative Templates/Windows Component] in Local Group Policy Editor, as shown in Figure 5-29.
- 2) Double click “Microsoft Defender Antivirus” in the list of “Windows component” and pop up the interface shown as Figure 5-43.



**Figure 5-43 Microsoft Defender Antivirus setting interface**

- 3) Double click “Turn off Microsoft Defender Antivirus” and pop up the interface shown as Figure 5-44. Select “Enabled” and click “OK”.

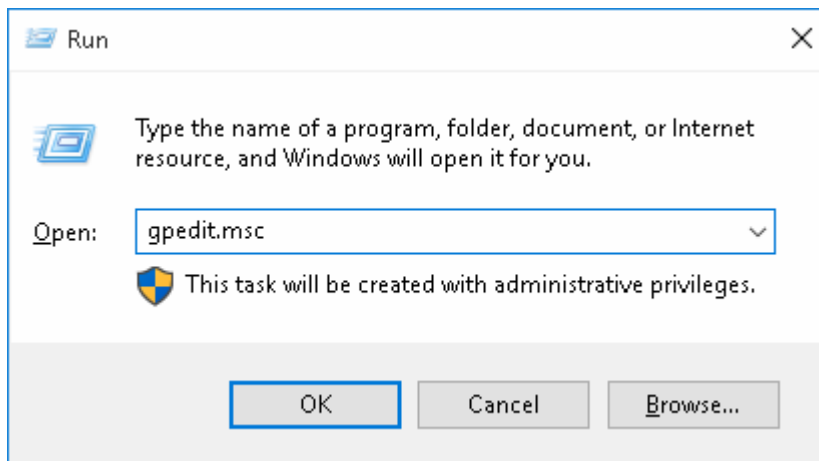


**Figure 5-44 Turn off Microsoft Defender Antivirus interface**

### 5.7.8 Turn off Autoplay

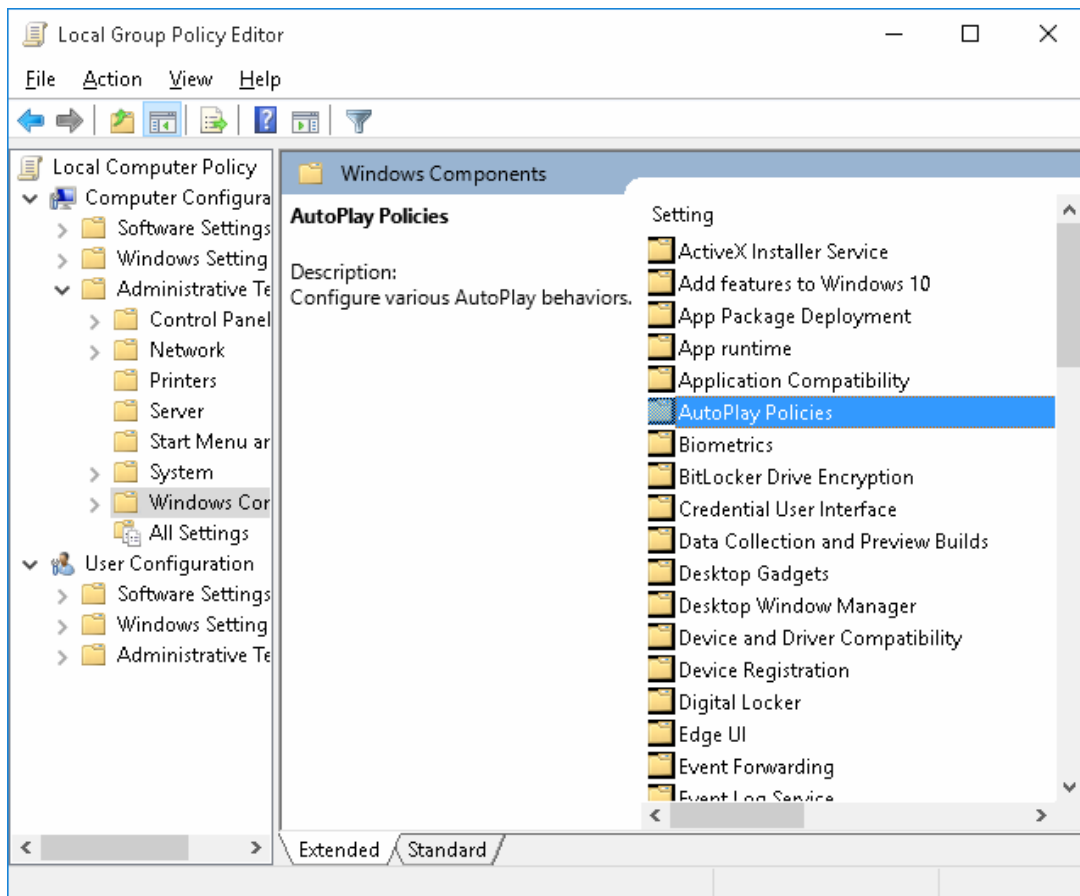
In order to prevent the computer from attacking by the virus carried in mobile storage devices and endangering the DCS supervision software, it is necessary to enable "Turn off Autoplay" function.

- 1) Open "Run" interface by shortcut key "Windows + R", then type command "gpedit.msc" in Run dialog box, as shown in Figure 5-45.



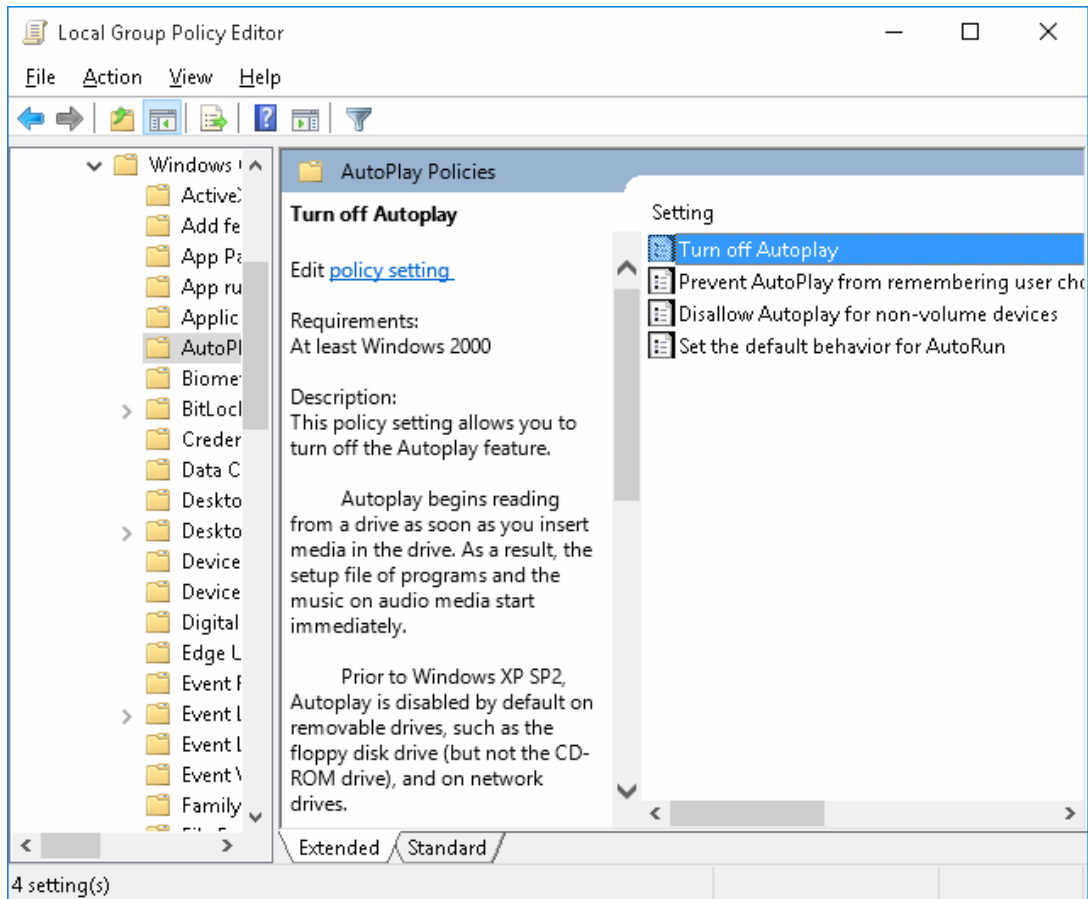
**Figure 5-45 Run dialog box**

- 2) Click “OK” to pop up the “Local Group Policy Editor” interface, extend “Computer Configuration”, select “Windows Components” below “Administrative Templates”, as shown in Figure 5-46.



**Figure 5-46 “Windows Components” window**

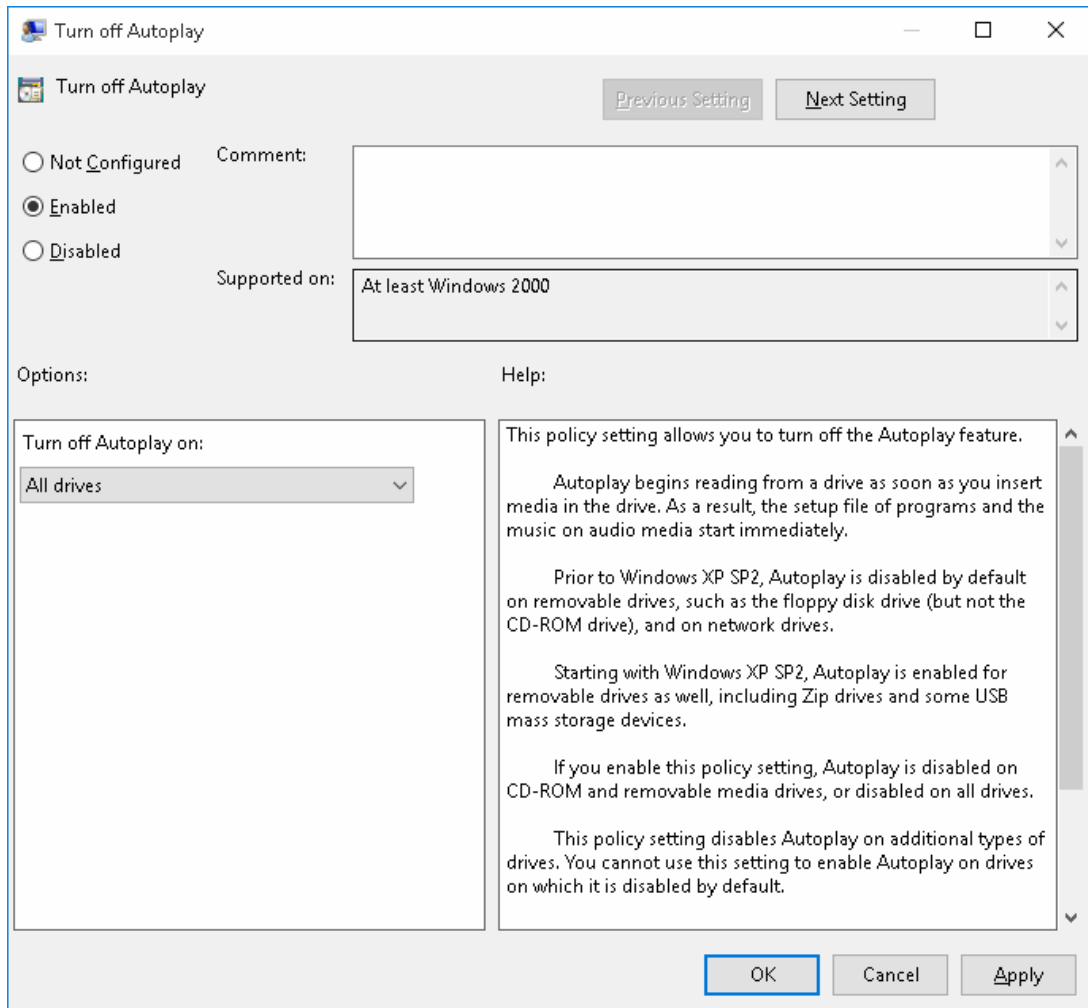
- 3) Double click “AutoPlay Policies”, pop up the following interface.



**Figure 5-47 “AutoPlay Policies” window**

- 4) Double click “Turn off Autoplay” in “AutoPlay Policies” window, pop up “Turn off Autoplay” interface, select “Enabled” and choose “All drives” in the drop-down menu of the “Turn off Autoplay on”, as shown in Figure 5-48.





**Figure 5-48 “Turn off Autoplay” settings**

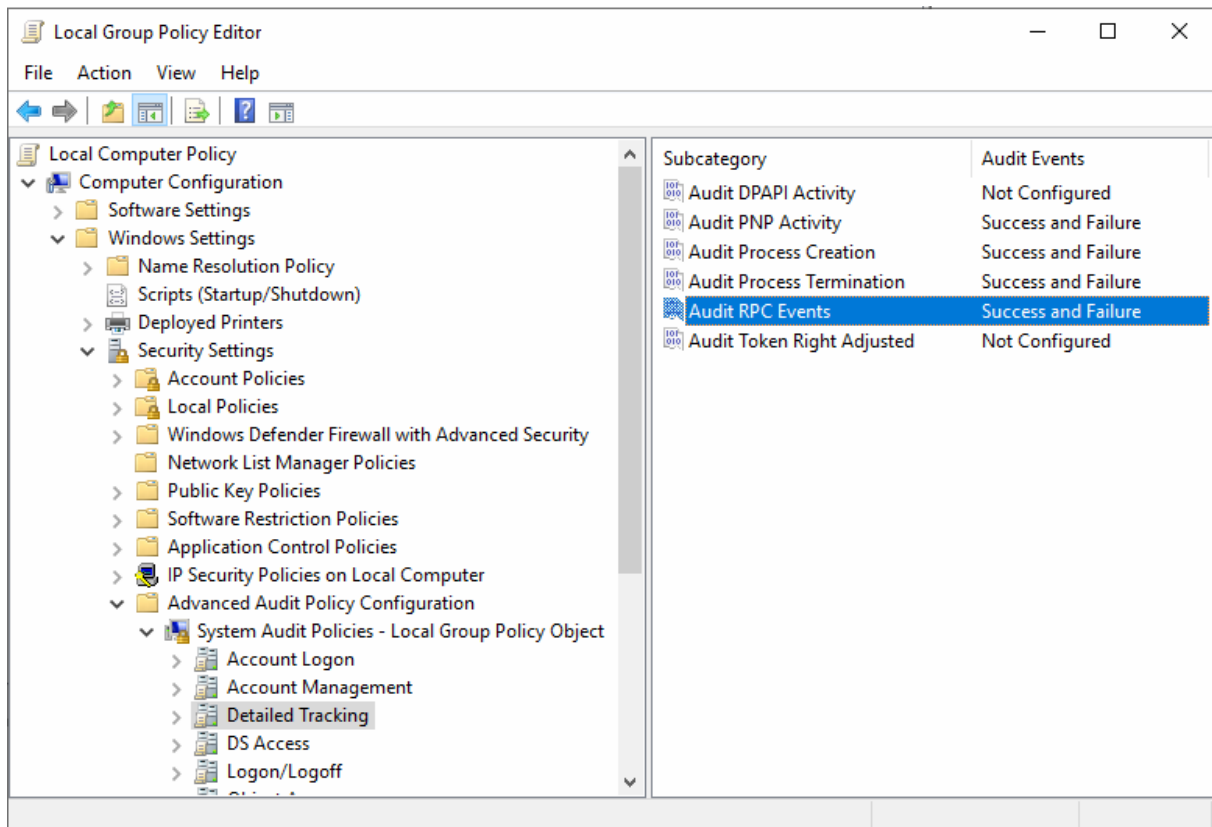
- 5) Click “OK” to finish the settings. Restart your computer, then the mobile storage devices will not automatically play when be inserted.

### 5.7.9 Enabling Security Audit Policy

To facilitate efficient tracking of the virus source, it is necessary to enable the security audit policy. The specific steps are as follows:

1. In the "Local Group Policy Editor" interface shown in Figure 5-46, select "Local Computer Policy/Computer Configuration/Windows Settings/Security Settings/Advanced Audit Policy Configuration/System Audit Policies - Local Group Policy Object/Detailed Tracking" to enter the configuration interface.
2. Double-click "Audit Process Creation", check "Configure the following audit events" in the pop-up dialog box, and select "Success" and "Failure".
3. Repeat the operation of step 2, and configure "Audit PNP Activity", "Audit Process Termination", and "Audit RPC Events" respectively.

The configuration results are shown in Figure 5-49.



**Figure 5-49 Security Audit Policy settings**

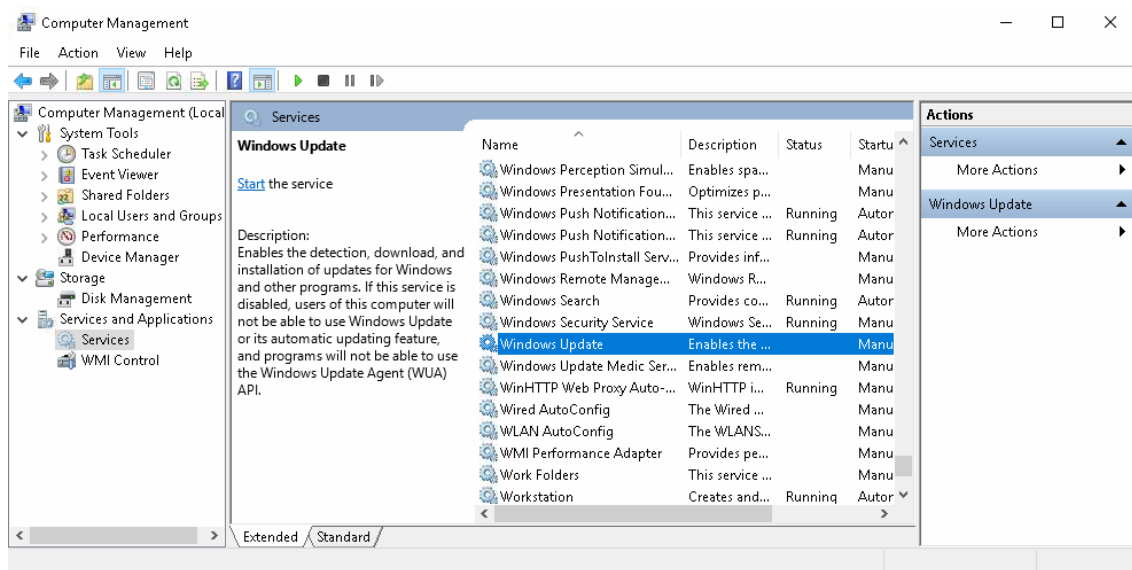
## 5.8 Background Service Settings

Set the following services to “Disabled” by the same method, which is described taking the Windows Update as an example.

- Windows Update
- Internet Connection Sharing
- Windows Backup
- Windows Time
- Touch Keyboard and Handwriting Panel Service

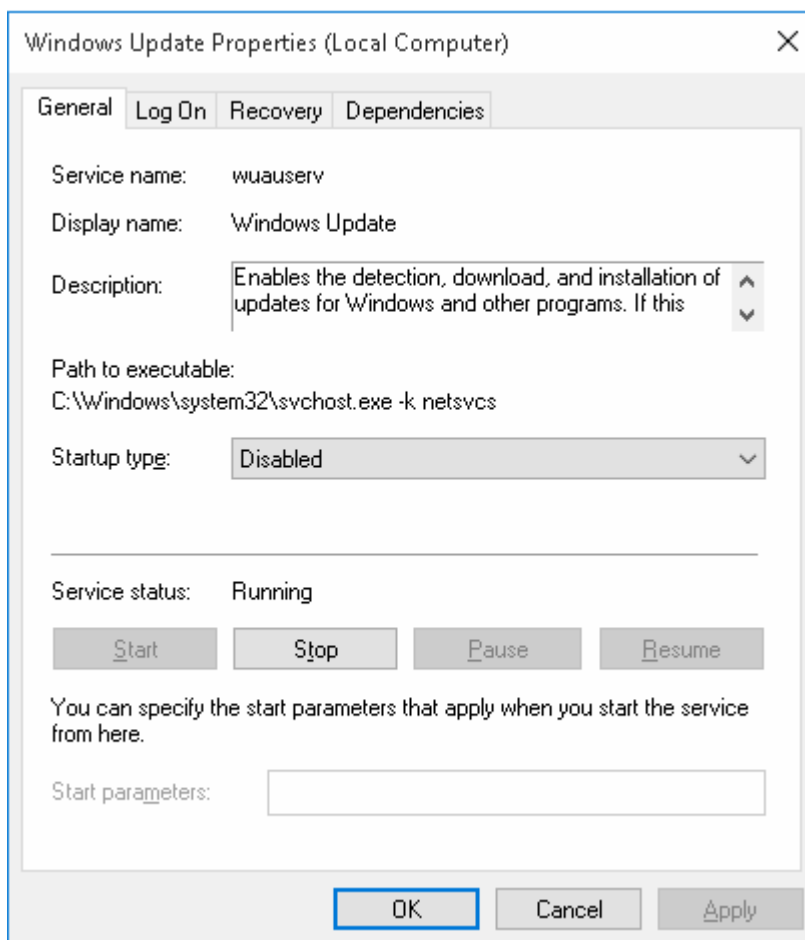
### Procedure of disabling Windows Update

1. Right click “This PC” and select “Manage” in the right-click menu, pop up the “Computer Management” interface, then select “Services” below “Services and Applications”, as shown in Figure 5-50.



**Figure 5-50 Services list window**

2. Double click “Windows Update” in the services list, pop up the corresponding properties setting interface, select “Disabled” in the pull-down list of “Startup type”, as shown in Figure 5-51.



**Figure 5-51 Disable the service of “Windows Update”**

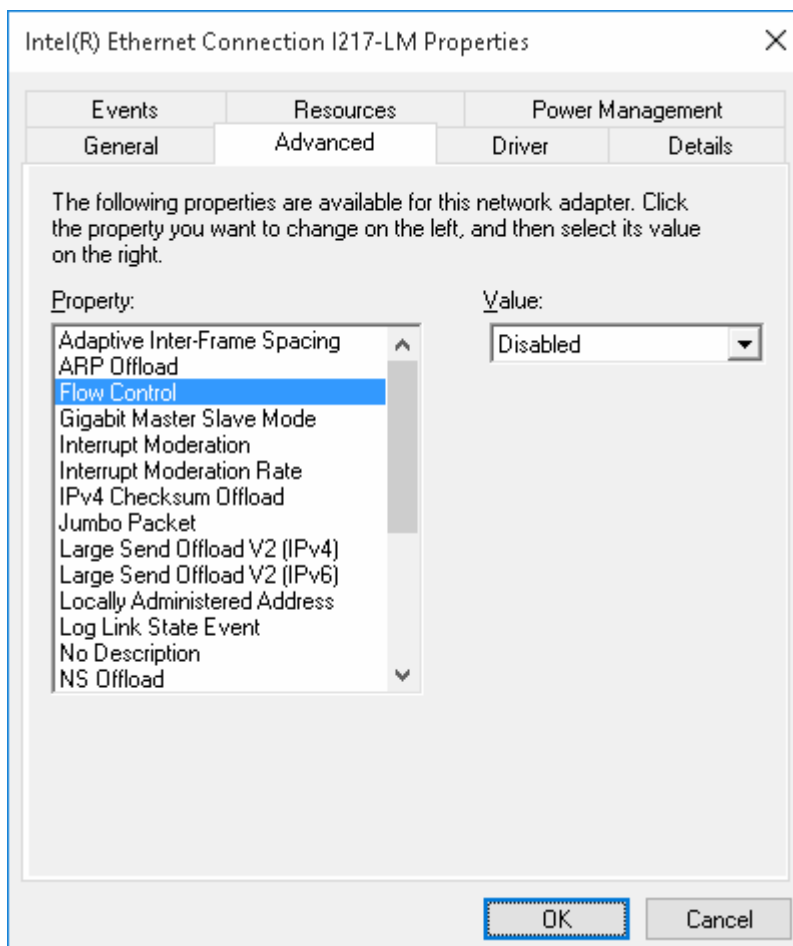
3. Click “Stop” to stop this service, then click “OK” to disable this service.

**Warning:**

All network connections on the operation nodes should be disabled after setting background services.

## 5.9 Turn off Flow Control of Network Adapter

1. Right click “Computer” and select “Manage” in the right-click menu, pop up the “Computer Management” interface.
2. Right click a network adapter in device manager window, select “Properties” in right-click menu to open its properties interface.
3. Set “Flow Control” to “Disable” in “Advanced” option page in properties interface.



**Figure 5-52 Disable flow control of network adapter**

4. Click “OK” to finish a network adapter setting.

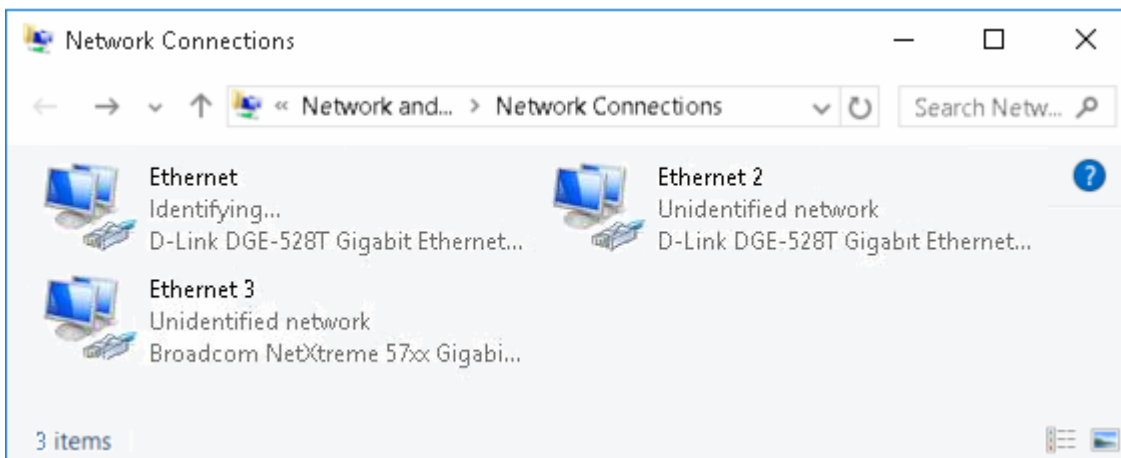
5. Set other network adapters like this.

## 5.10 Network Properties Settings

Set the Network Connections Settings as follows after finishing the network hardware connections settings, this chapter includes connection properties settings and advanced sharing settings.

### 5.10.1 Network Properties Configuration

Select [Control Panel/Network and Internet/Network and Sharing Center], then click “Change adapter settings”, pop up network connection settings interface.



**Figure 5-53 Network connections setting interface**

The “Ethernet 3” as shown in above figure utilizes integrated network adapter of the system, and “Ethernet” and “Ethernet 2” utilize the two network adapters inserted.

1. If VisualField is installed in the control system, the properties of network adapters should be set as follows:
  - 1) Change the “Ethernet” to “Network A” that is to connect process control network-A.  
Properties setting of “Network A” is as follows:
    - IP address: 172.20.X.Y (X indicates the domain address; Y indicates the station address. Both of them should be in the value range of operation node addresses.)
    - Subnet mask: 255.255.0.0
    - Other items such as DNS, WINS etc shall remain default.
  - 2) Change the “Ethernet 2” to “Network B” that is to connect process control network-B.  
Properties setting of “Network B” is as follows:
    - IP address: 172.21.X.Y (X indicates the domain address; Y indicates the station address. Both of them should be in the value range of operation node addresses.)
    - Subnet mask: 255.255.0.0

- Other items such as DNS, WINS etc shall remain default.
- 3) Change the “Ethernet 3” to “Information Network” that is to connect information network, Properties setting of “Information Network” is as follows:
- IP address: 172.30. X.Y (X indicates the domain address; Y indicates the station address. Both of them should be in the value range of operation node addresses.)
  - Subnet mask: 255.255.0.0
  - Other items such as DNS, WINS etc shall remain default.
2. If AdvanTrol-Pro is installed in the control system, the properties of network adapter should be set as follows:
- 1) Change the “Ethernet” to “Network A”, that is to connect process control network- A, Properties setting of “Network A” is as follows:
- IP address: 128.128.1.X (X is should be in the value range of operation node addresses.)
  - Subnet mask: 255.255.255.0
  - Other items such as DNS, WINS etc shall remain default.
- 2) Change the “Ethernet 2” to “Network B”, that is to connect process control network-B, Properties setting of “Network B” is as follows :
- IP address: 128.128.2. X ((X should be in the value range of operation node addresses.)
  - Subnet mask: 255.255.255.0
  - Other items such as DNS, WINS etc shall remain default.
- 3) Change the “Ethernet 3” to “Operation Network”, that is to connect with operation network, Properties setting of “Operation Network” is as follows:
- IP address: 128.128.5. X (X should be in the value range of operation node addresses.)
  - Subnet mask: 255.255.255.0
  - Other items such as DNS, WINS etc shall remain default.

Check whether the network adapter functions well or not after setting.



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**Attention:**

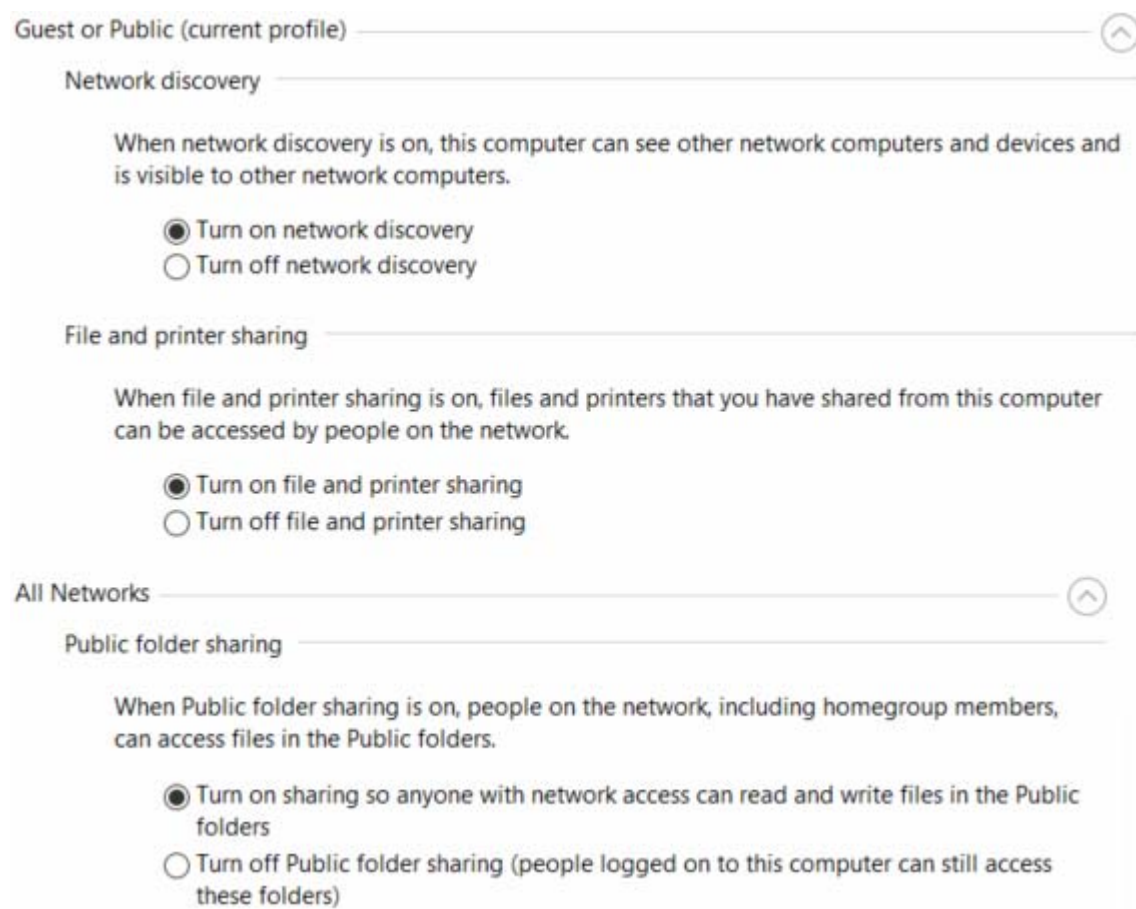
**Please refer to the related User Manual for Network Properties Settings.**

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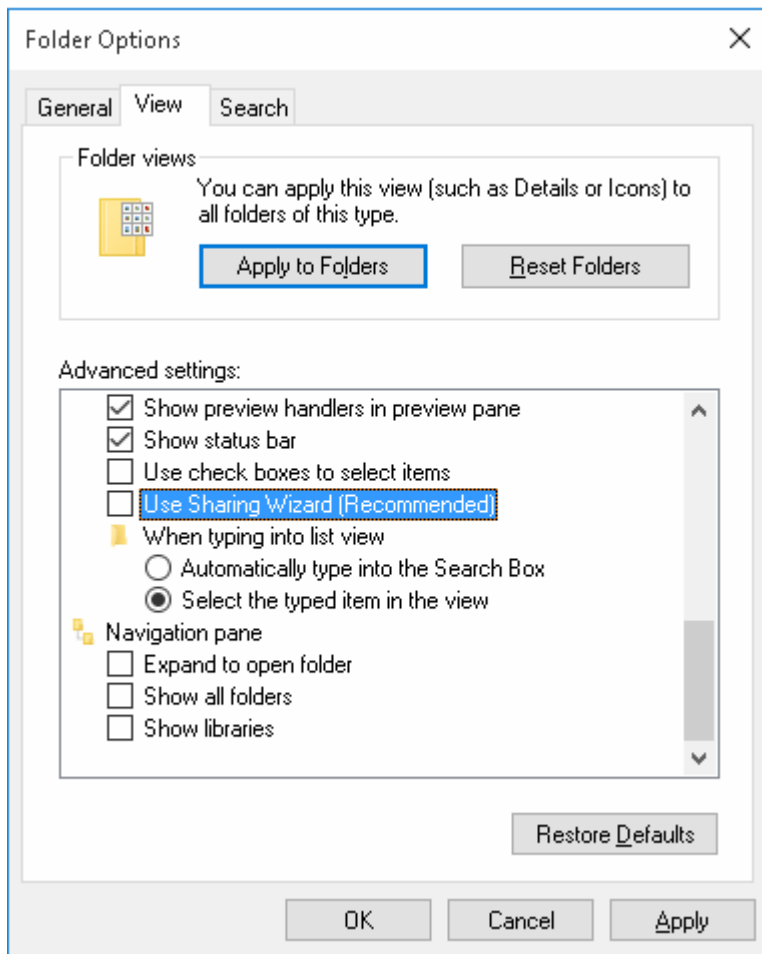
### 5.10.2 Advanced Sharing Settings

Select [Control Panel/Network and Internet/Network and Sharing Center], then click “Change advanced sharing settings”, pop up “Advanced sharing settings” interface. Check "Turn on network discovery", “Turn on file and printer sharing” and “Public folder sharing”, as shown in

Figure 5-54.

**Figure 5-54 Advanced sharing settings**

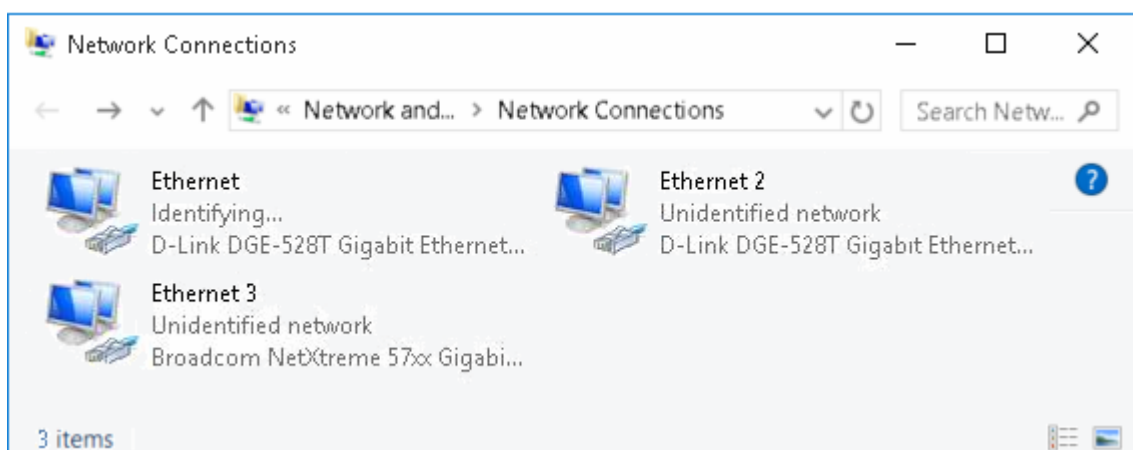
Double click "This PC", select [File /Change folder and search options] on the menu bar in the local disk interface, deselect "Use Sharing Wizard (Recommended)" in "View" tab, as shown in Figure 5-55.



**Figure 5-55 Folder options setting interface**

### 5.10.3 Network Power Management Configuration

1. Select [Control Panel/Network and Internet/Network and Sharing Center], then click "Change adapter settings", the network connection settings interface pops up.

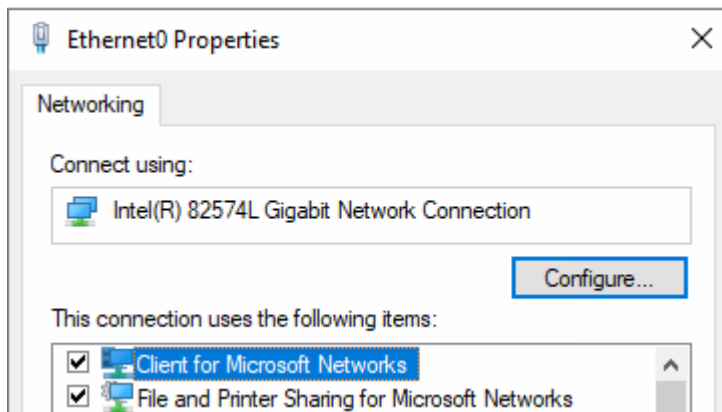


**Figure 5-56 Network connections setting interface**

2. Right-click an adapter and select "Properties" in the right-click menu to pop up the



properties interface, as shown below.



**Figure 5-57 Properties of network connections**

3. Click "Configure" button in the Networking tab to pop up the properties interface of network adapter. Then, select the "Power Management" tab and unselect the item "Allow the computer to turn off this device to save power".



**Figure 5-58 Properties of network adapter**



**Tips:**

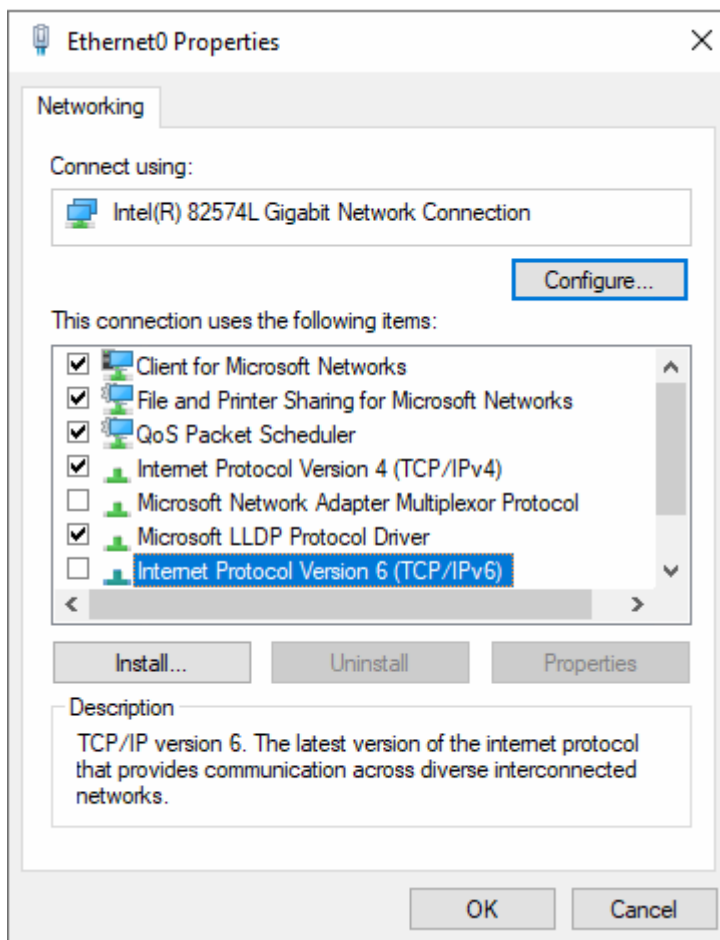
By following steps, you can also open the setting interface of network adapter properties: (The interfaces opened in the two ways may not be exactly the same, please refer to the actual interface.)

1. Right-click on the "Computer" icon on the desktop and select "Manage" in the right-click menu.
  2. In the "Computer Management" window, select "Device Manager" from the left tree-list under "Computer Management/System Tools".
  3. Select a network adapter from the list of hardware devices on the right-hand side, and select "Properties" in the right-click menu.
-

4. Save the changes of settings.
5. Repeat the steps above to change the corresponding properties of each network adapter.

#### 5.10.4 Disable IPv6

1. Select [Control Panel\Network and Internet\Network and Sharing Center\Change adapter settings] to open the setting interface of network connection, as shown in Figure 5-56.
2. Right click a adapter and select "Property" in the right-click menu to open the property interface of network connection, as shown in Figure 5-59, unselect the item "Internet Protocol Version 6 (TCP/IPv6)".



**Figure 5-59 Network connection properties**

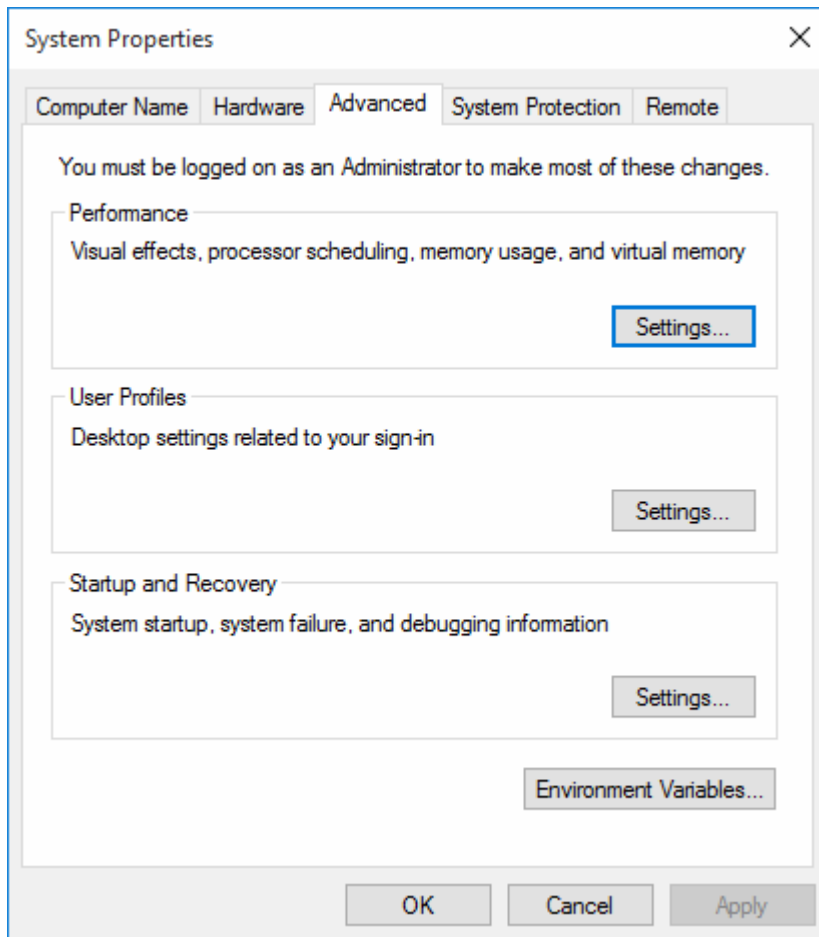
3. Click OK to save the setting.
4. Repeat the steps above to change the property of each adapter.

## 5.11 Startup and Recovery Settings

In order to save full information about abnormal situation immediately when the Windows

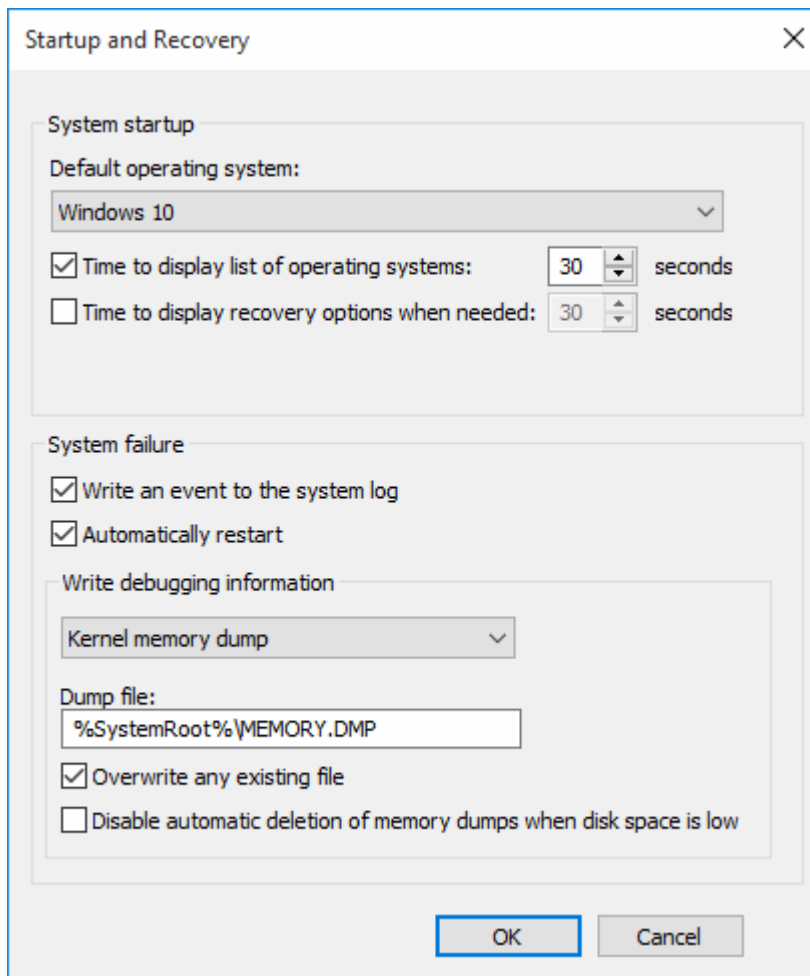
operating system appears blue screen in the application process, write debugging information mode of Startup and Recovery setting should be selected as “Kernel memory dump” in the settings of System Properties. The detailed operating steps are shown below:

- 1) Open “Run” interface by shortcut key “Windows + R”, then type command “systempropertiesadvanced.exe” to pop up “User Properties” dialog box and switch to the tab Advanced, as shown in Figure 5-60.



**Figure 5-60 Advanced system property settings**

- 2) Click the button “Settings” in “Startup and Recovery” window to pop up the interface as shown in Figure 5-61, then select “Kernel memory dump” from the drop-down list of “Write debugging information” window below “System failure”.



**Figure 5-61** *Setting interface of Startup and Recovery*

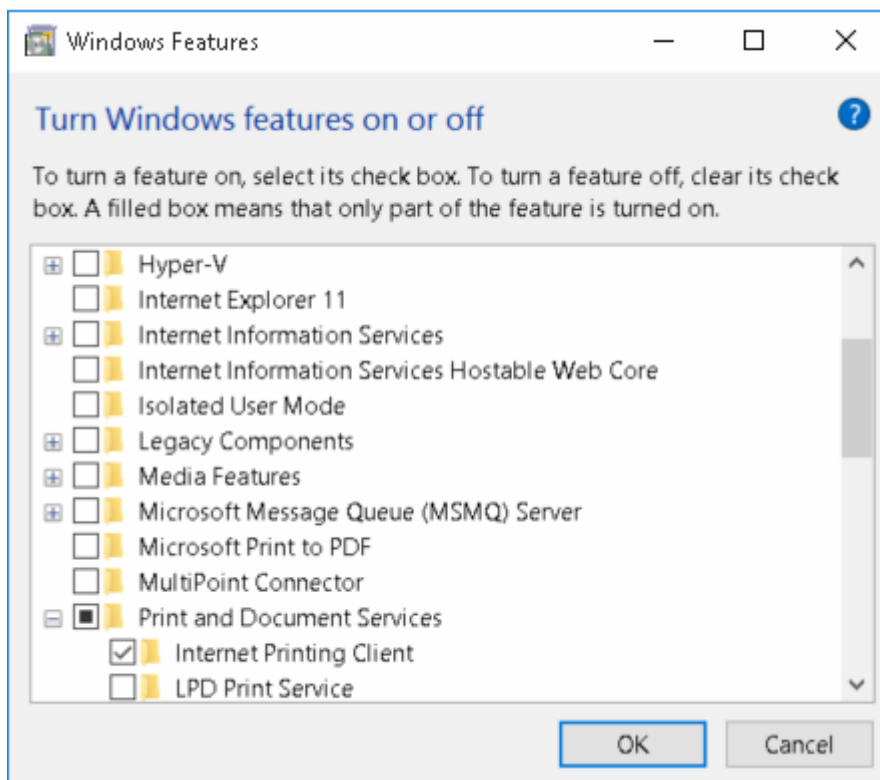
- 3) After setting, click “OK”.

## Section 6 System Purification

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Remove MSN, Media Player, game programs and additional programs generated during the installation.

Click “Programs” in the “Control Panel” interface, then select “Turn Windows features on or off” in “Programs and Features” to pop up “Windows Features” dialog box, as shown below. Just select “Internet Printing Client”, not the others.



**Figure 6-1** System purification settings

Click “OK” to delete corresponding programs, then reboot computer according prompt information.

## Section 7 Checklist

After Windows 10 has been installed completely, you can check each of the proprieties settings according to the items in the following table.

Setting items		Setting result	Notes
Driver Programs	Main broad driver and integrated components drivers	All of them has been installed	-
	Drivers for other components		-
User Accounts	Enable administrator account		-
	Disable built-in users and delete other users except Administrator		-
	Set automatic logon		-
Display Properties	Theme setting	Default theme Windows	-
	Customize desktop	This PC, Network and Recycle Bin	-
	Screen saver setting	None	-
	Power plan	High performance	-
	Power Options – Advanced settings	High performance	-
	Turn off the display	Never	-
	Put the computer to sleep	Never	Skip this item if there is no such setting.
	Sleep after	Never	-
	Allow hybrid sleep	Off	-
	Hibernate after	Never	-
	Screen: When plugged in, turn off after	Never	-
	Sleep: When plugged in, PC goes to sleep after	Never	Skip this item if there is no such setting.
	Screen resolution	19” monitor: 1280 * 1024 pixels (recommended) 20” monitor: 1600 * 1200 pixels (recommended) 22” widescreen monitor: 1920 * 1080 pixels (recommended) 24” widescreen monitor: 1920 * 1080 pixels (recommended)	-
	ClearType Text Tuner	Turn off ClearType	-
	Turn off Aero Shake window minimizing mouse gesture	Turn off	-
Turn off StickyKeys and ToggleKeys	Keyboard Shortcut	Turn off	-
Turn off Hot Keys of Rotating Screen	Keyboard Shortcut	Turn off	Skip this item if there is no such setting.
Taskbar and Start Menu Properties Setting	Taskbar settings	Lock the taskbar and Keep the taskbar buttons: On Automatically hide the taskbar: Off Taskbar location on screen: Bottom Combine taskbar buttons: Never	-

Setting items		Setting result	Notes
	Notification area icons	Action center: Off	-
Time Settings	Time	Short time: HH:mm Long time: HH:mm:ss	-
	Data	Short data: M/d/yyyy Long data: dddd, MMMM dd, yyyy	-
System and Security	Security and Maintenance	Turn off security messages and maintenance messages	-
	User accounts control	Never notify	-
	User Account Control: Run all administrators in Admin Approval Mode	Disabled	-
	Windows Defender Firewall	Turn off	-
	Windows defender firewall Service	Disabled	-
	System restore	Turn off system protection	-
	Visual effects	Adjust for best performance	-
	Virtual memory	Set sizes of Initial size and Maximum size both as 3000MB (4000MB when the RAM is larger than 2GB)	-
	Auto-update	Never check for updates	-
	Microsoft Defender Antivirus	Close Microsoft Defender Antivirus: Enabled	-
	Turn off auto-play	Enabled	-
	Security Audit Policy Settings	"Audit PNP Activity", "Audit Process Creation", "Audit Process Termination", and "Audit RPC Events": enable these subcategories and set their audit events as "Success" and "Failure"	-
Service	Windows Update	Disabled	-
	Internet Connection Sharing		-
	Windows Backup		-
	Windows Time		-
	Touch Keyboard and Handwriting Panel Service		-
Network Properties Setting	Flow Control	Disabled	-
	Ethernet 3	Rename: Information Network IP: 172.30.X.Y	Fit for VisualField software packets
		Rename: Operation Network IP: 128.128.5.X	Fit for AdvanTrol-Pro software packets
	Ethernet	Rename: Network A IP: 172.20.X.Y	Fit for VisualField software packets
		Rename: Network A IP: 128.128.1.X	Fit for AdvanTrol-Pro software packets
	Ethernet 2	Rename: Network B IP: 172.21.X.Y	Fit for VisualField software packets
		Rename: Network B IP: 128.128.2.X	Fit for AdvanTrol-Pro software packets

Setting items		Setting result	Notes
Network Properties Settings	Advanced Sharing Settings	Turn on "Network discovery", "File and printer sharing" and "Public folder sharing", deselect "Use Sharing Wizard (Recommended)"	-
Network Adapter Property	Power Management	Unselect "Allow the computer to turn off this device to save power"	-
	Network Property	Unselect "Internet Protocol Version 6 (TCP/IPv6)"	-
Startup and Recovery	Write debugging information	Select "Kernel memory dump"	-
System Purification	Remove game programs, image processing programs, network connection wizard and additional programs generated during the installation. Just select "Internet Printing Client"		-



## Section 8 Revision

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*Table 8-1 Retrofit list of the version*

Document Version	Applicable Product Version	Remarks
V1.0 (20230626)	Windows 10 Enterprise LTSC 2021	The first version.