ADV Image Manager
User Manual

V1.1

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ADV Image Manager User Manual

1. Foreword

In Windows 10 IoT Enterprise, Microsoft provides a Backup and Restore function, however, it needs many steps to achieve these functions. ADV Image Manager provides an easy way to backup and recover the computer system.

2. Requirements

I.   ADV Image Manager only supports Windows 10 IoT Enterprise LTSC 2019 / 2021 in UEFI.
II.   The user account must have administrator privileges
III. Before starting to experience this tool, please enter the activation code. The activation code can be applied from here and has a 30 days expiration date. Please activate in 30 days.

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3. Limitation

I.   Recycle Bin will not be backup.

II.   Does not support more than one Windows system in the same computer.

III.   Do not plug in or remove external storage devices during Environment setup, Backup or Recovery.

IV.   Do not do any changes with disk or partition during the environment creation.

V.   Please don't format C:\. There are some necessary driver files that should exist at C:\ when the ADV Image Manager starts recovery.

VI.   The maximum partition number should not be over 23 in the computer.

VII.   The drive label "ADV Backup" should be exclusive for ADV Image Manager.

VIII. Need two free drive letters to create the environment.

IX.   Make sure the Defragmentation service (aka "Optimize drives" service) is turned on.

X.   Ensure that the partitions on the system disk meet the requirements outlined in 8.2 APPENDIX 2 and that there is no unallocated space on the system disk.

XI.   Bootable USB Media only recovery system partition, if you need to use WinRE features, please check your image source
   -     ADV backup image: Use "Set Up" to create WinRE environment
   -     Unsyspreped image: You need to put WinRE.wim by yourself

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4.   Information

4.1 System Information

First check your system version at the "Information" page. ADV Image Manager only supports Windows 10 IoT Enterprise LTSC 2019 / 2021 in UEFI. Windows 10 IoT Enterprise LTSC 2019 will be shown as "Windows 10 Enterprise LTSC 2019" in "Windows Version".
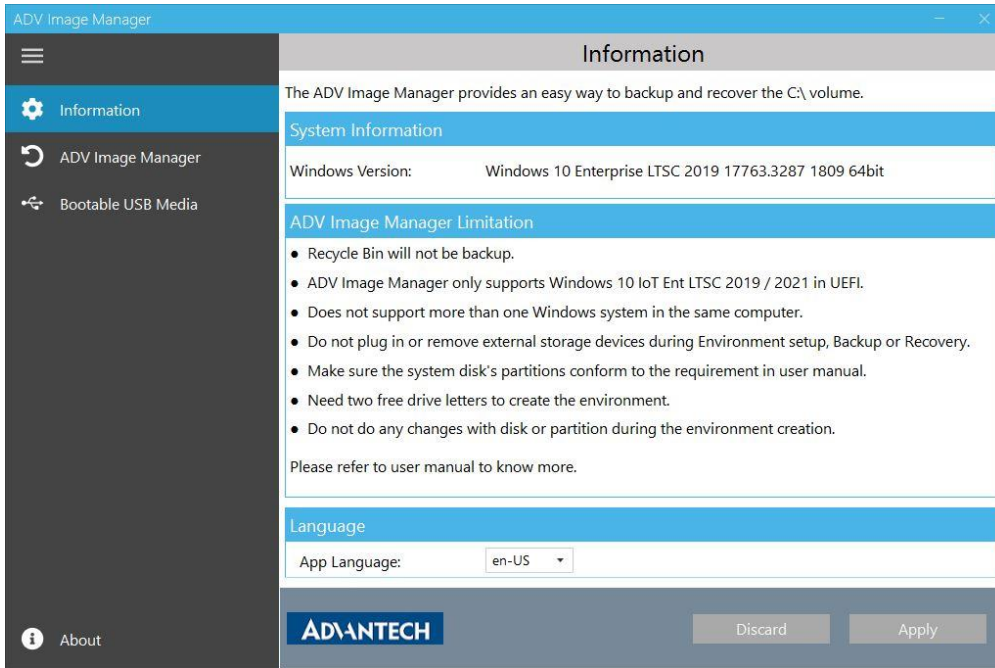

Windows 10 IoT Enterprise LTSC 2021 will be shown as "Windows 10 IoT Enterprise LTSC 2021" in "Windows Version".

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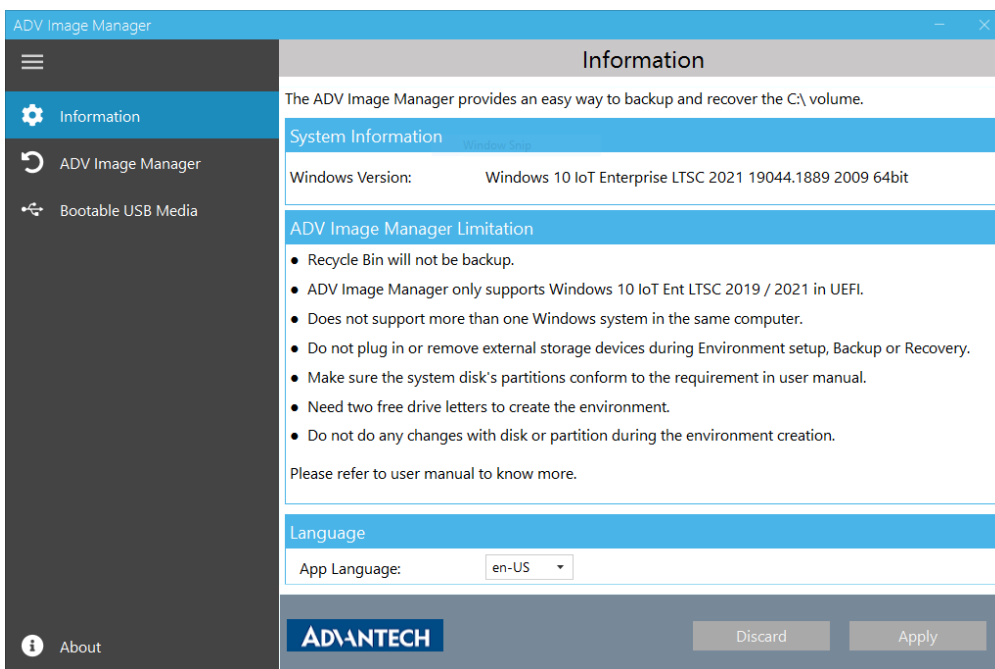
4.2 Language

ADV Image Manager is multilingual, you could choose the desired language and restart the utility to see it's changed to the selected language.

＊**Note:** ADV Image Manager is currently available in English and traditional Chinese. Your language is not yet included? Please contact your local FAE to add your language.

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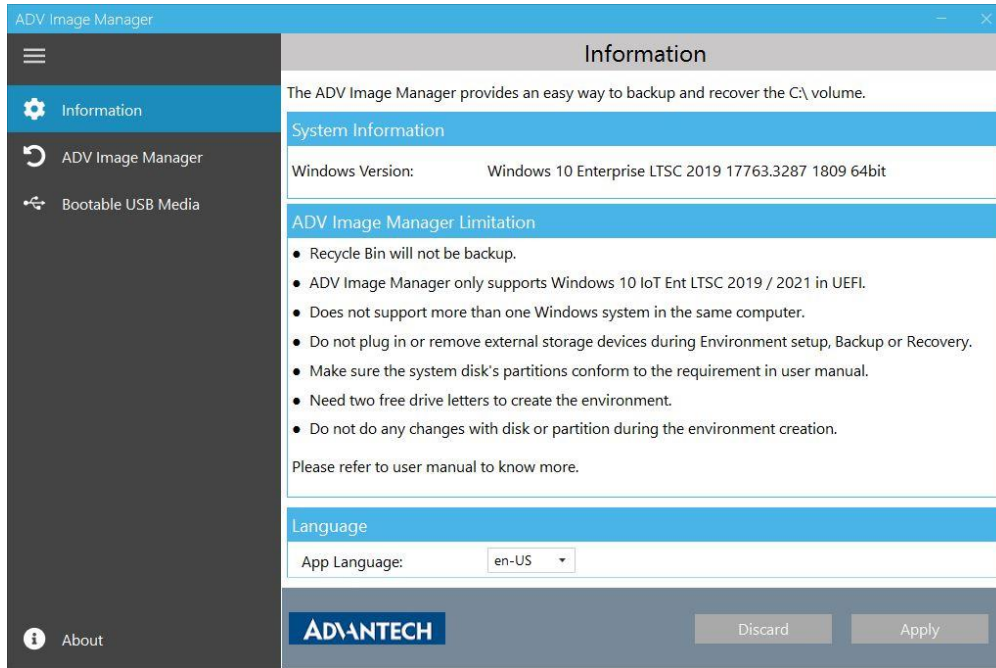
5. ADV Image Manager

ADV Image Manager is a tool used to backup and to recover computer system. ADV Image Manager can do backup and recover from desktop application. On the other hand, when the computer fails to enter Windows system, ADV Image Manager can be started from EFI Shell to recover the system.

What does the Environment setup section do?

When the environment setup starts, ADV Image Manager will replace the built-in WinRE with a new WinRE which includes an ADV Image Manager program in it. Meanwhile, ADV Image Manager will create the "ADV Backup" partition at the system disk to store the backup image.

What does the Backup section do?

When the backup starts, the system will restart and boot into the WinRE. In the WinRE, ADV Image Manager will backup the C:\ partition. Please don't close the command prompt and keep the system focused on the command prompt to run backup. When the backup is finished, the system will auto restart and boot into Windows. In Windows, open the ADV Image Manager application to check the backup result.

**What does the Recovery section do?**

When the recovery starts, the system will restart and boot into the WinRE. In the WinRE, ADV Image Manager will recover the C:\ partition and system partition. Please don't close the command prompt and keep the system focused on the command prompt to run recovery. When the recovery is finished, the system will auto restart and boot into Windows. In Windows, open the ADV Image Manager application to check the recovery result.

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5.1 Start to set up environment

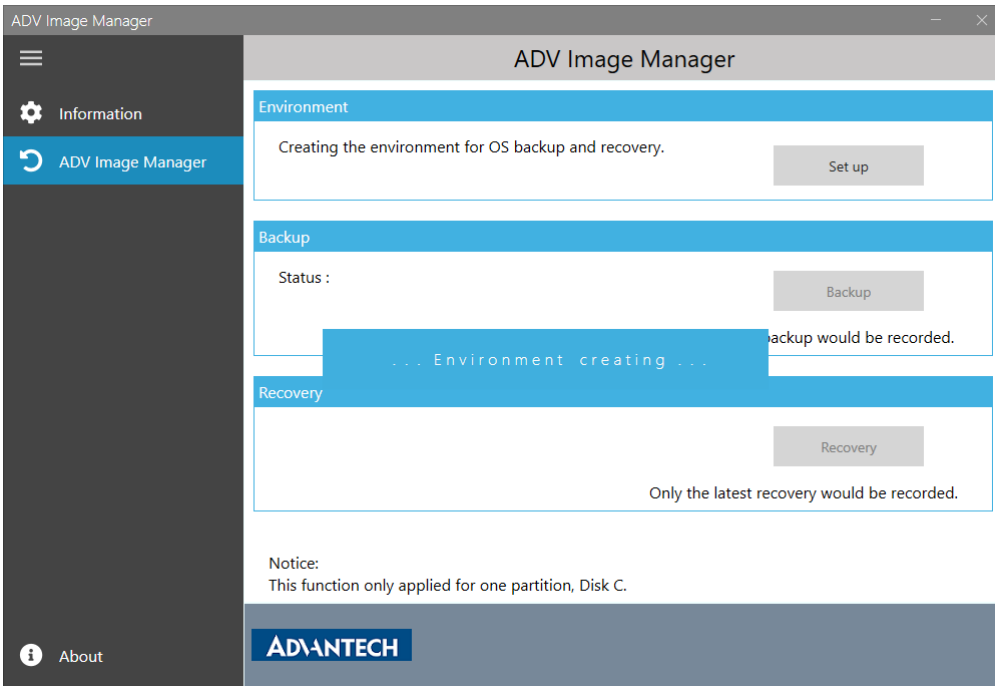Select the "ADV Image Manager" page then press "Set up".
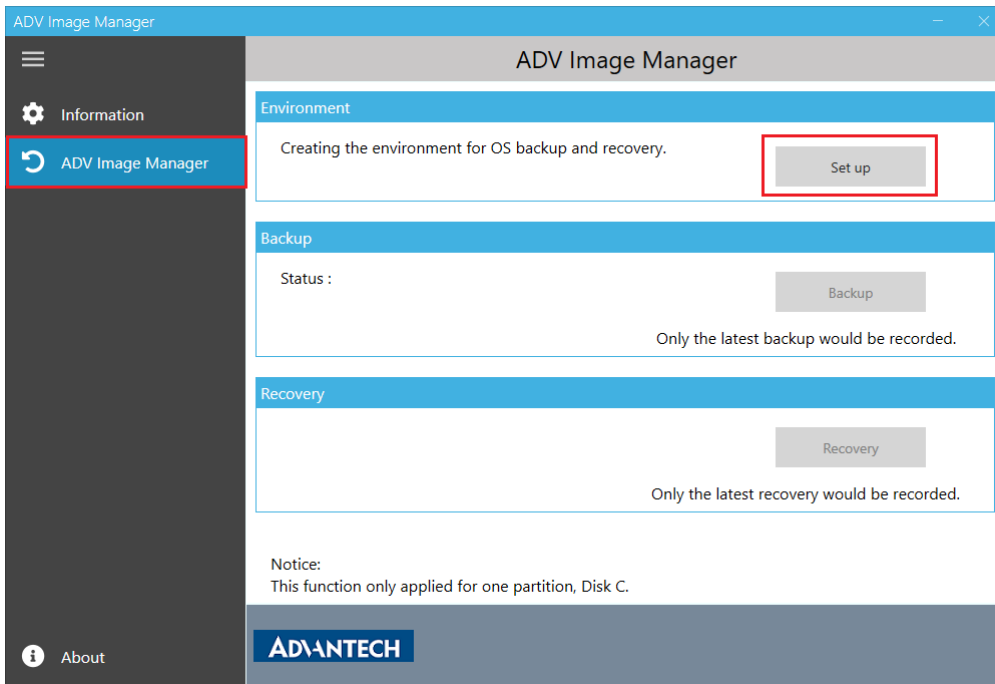
The computer built-in WinRE will be replaced after the ADV Image Manager environment is created. This is an irreversible change even when the ADV Image Manager is uninstalled. Press "OK" to continue creating the environment.
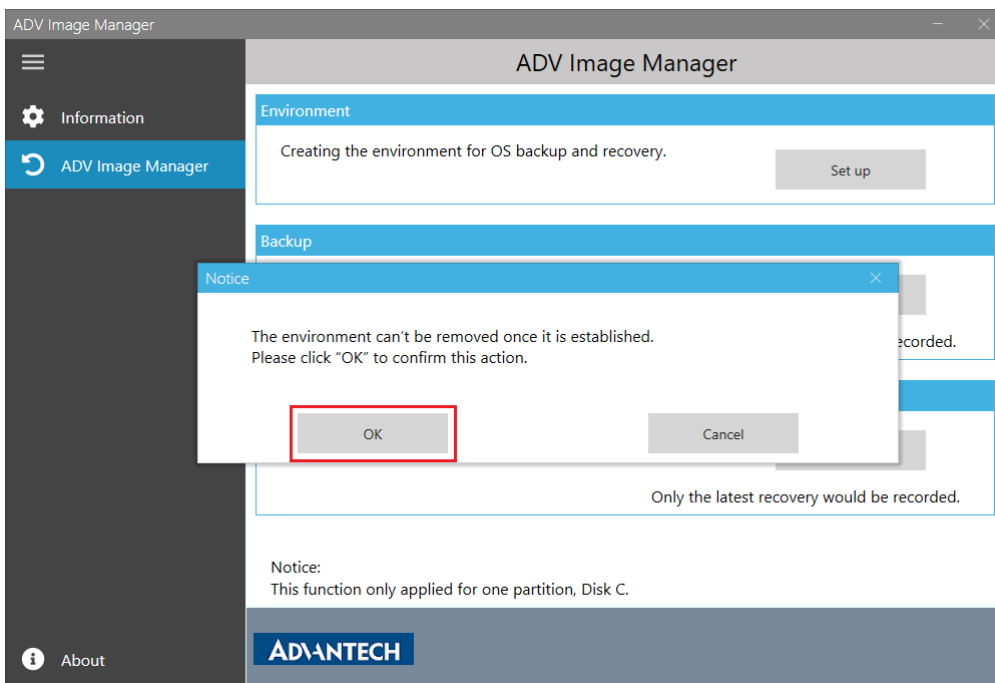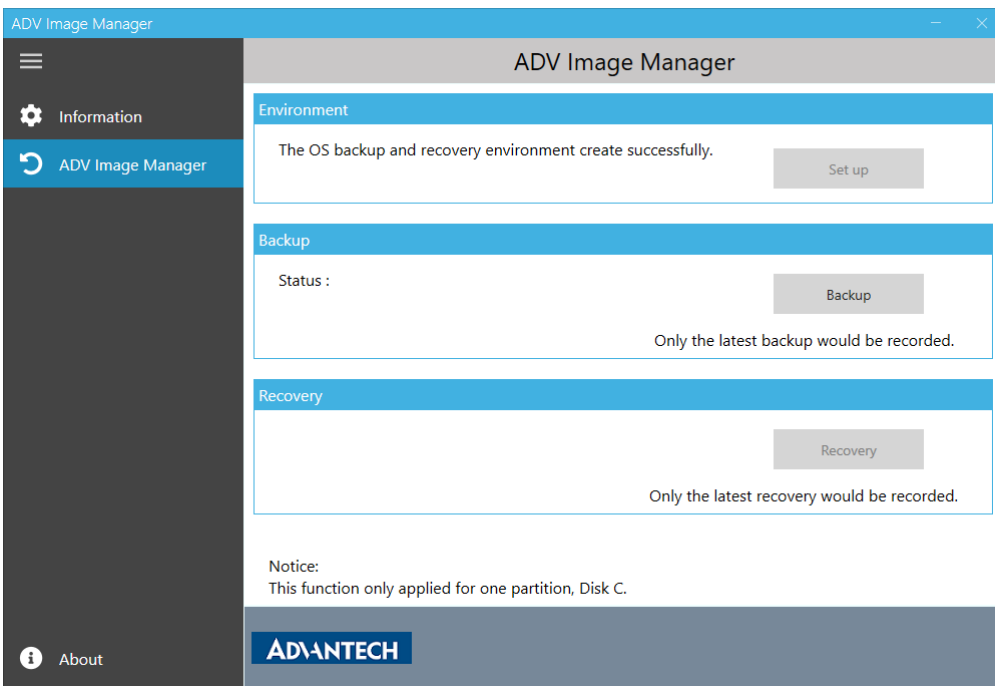

After pressing the "OK", "Environment creating" will show up.

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When the environment is created successfully, ADV Image Manager will show as below.

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5.2 Create Image Backup

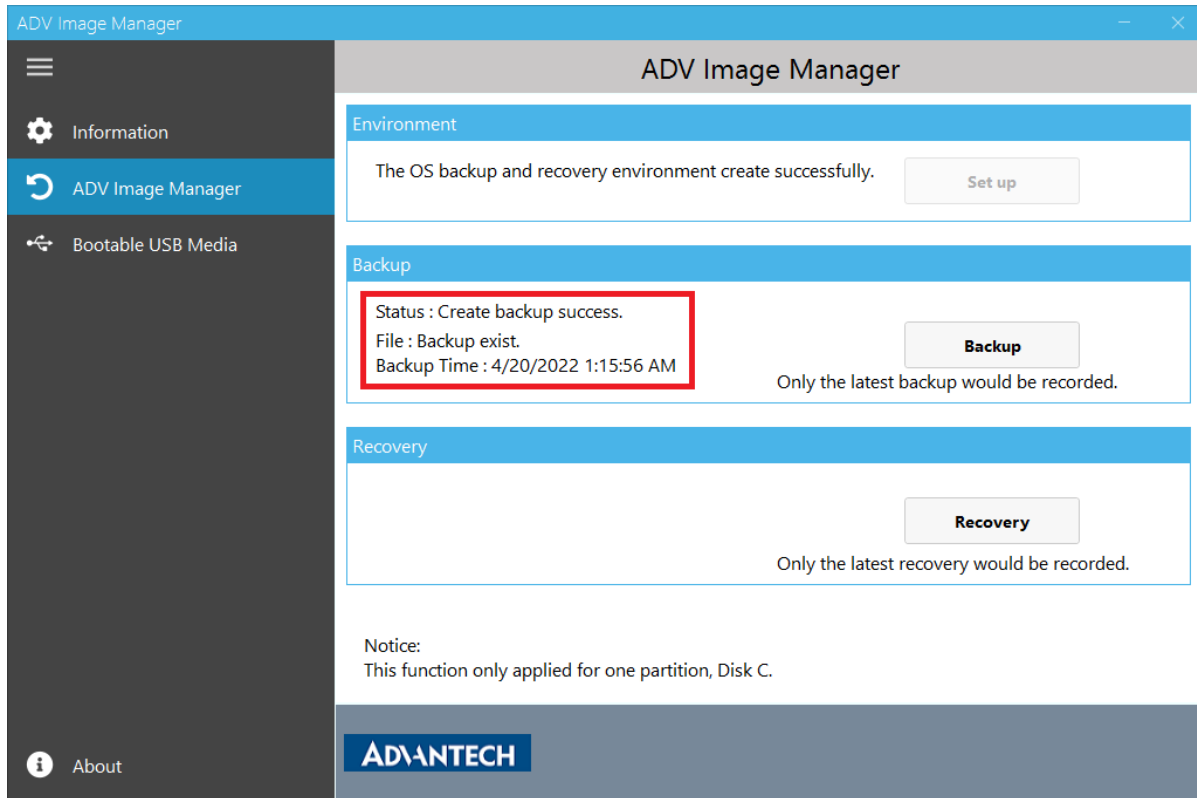Click the "Backup" button then press "OK". After pressing "OK", the system will restart to WinRE and start backup.

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You're about to be signed out

Windows will shut down in less than a minute.
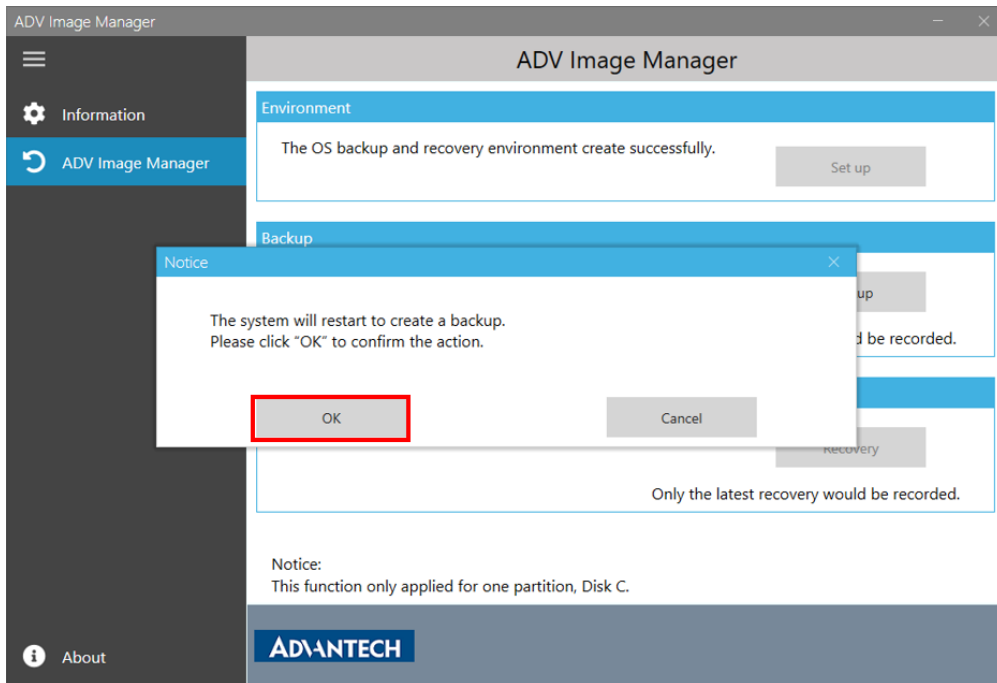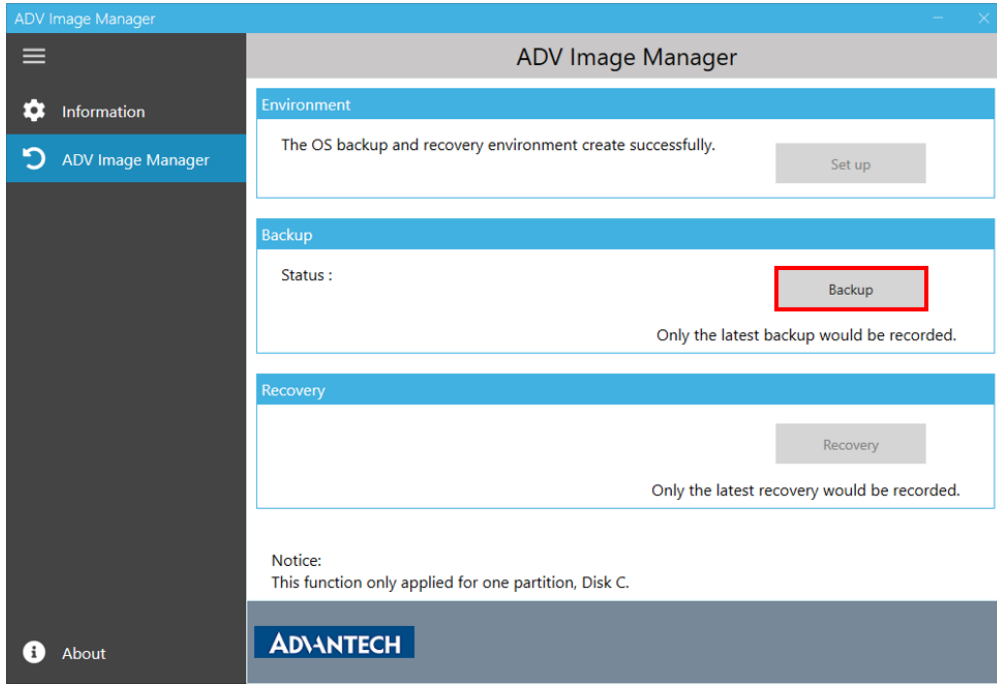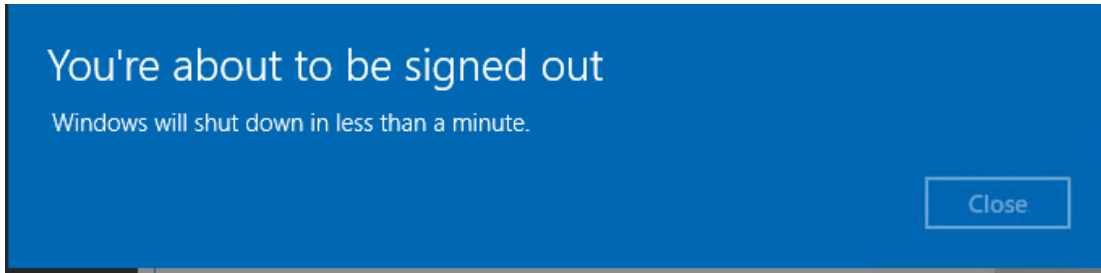
Close

In WinRE, please don't close the command prompt and keep the system focused on the command prompt to run backup. If the system is not focused on the command prompt, please press "Enter" in the command prompt to get the focus.

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When the backup is finished, the system will auto restart and boot into Windows. In Windows, open the ADV Image Manager application to check the backup result.
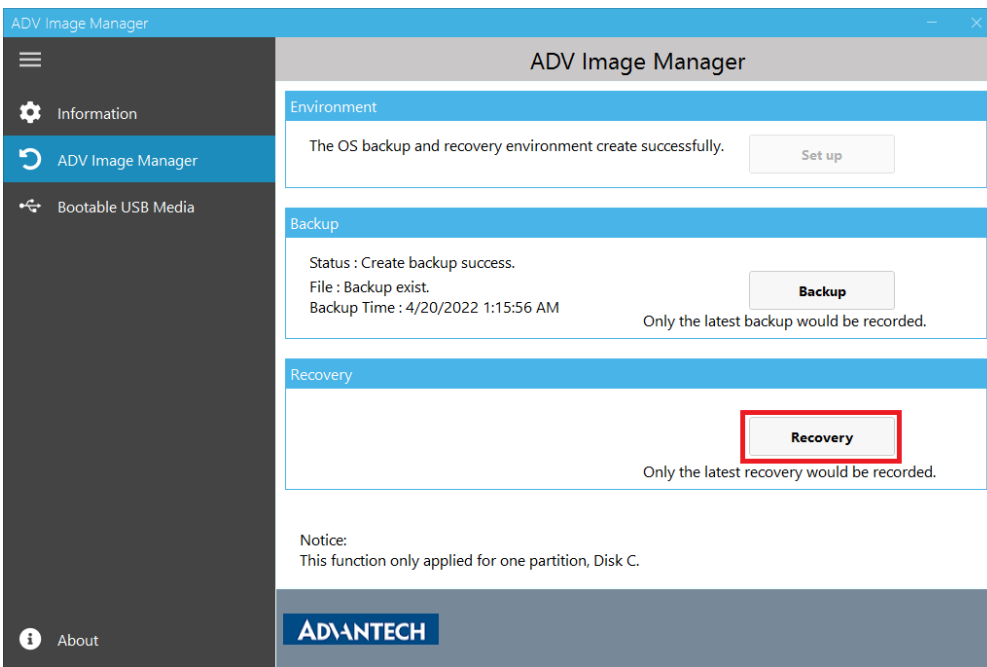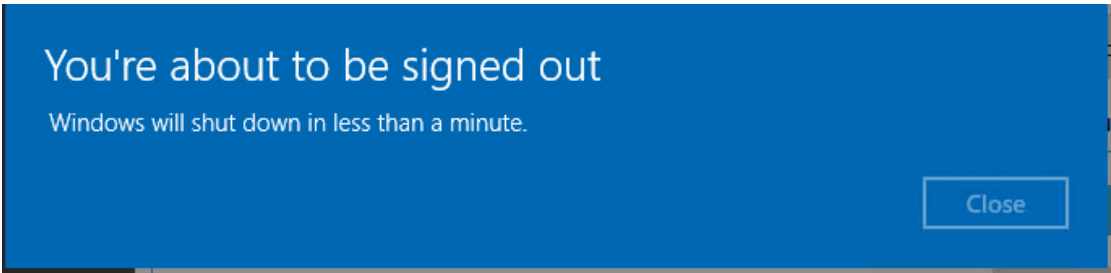
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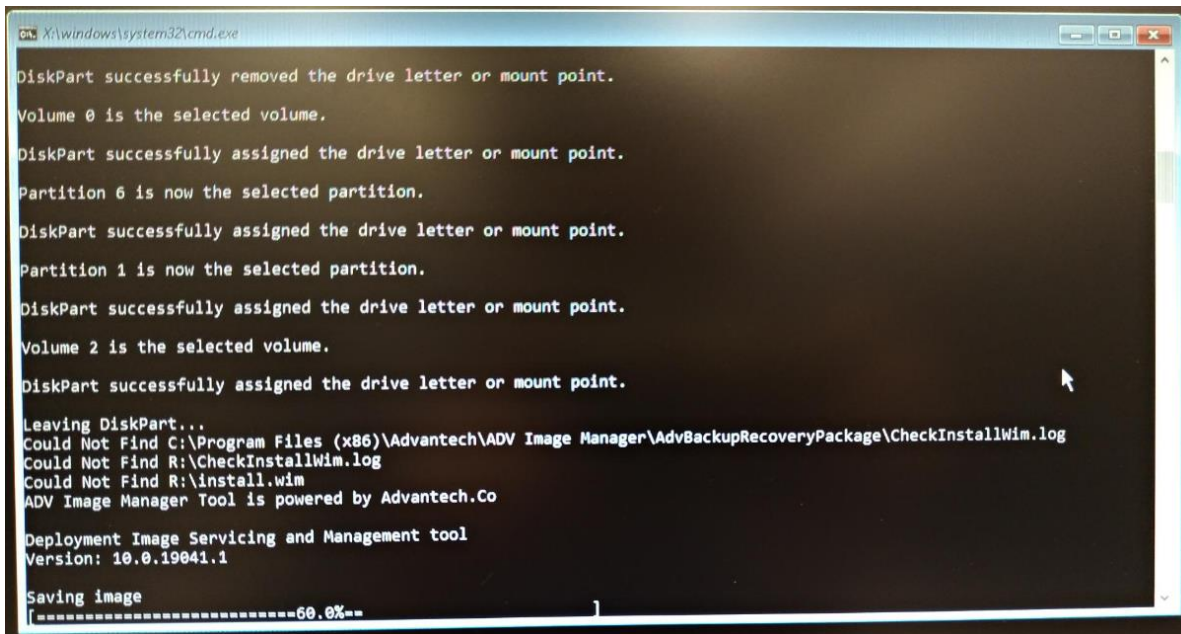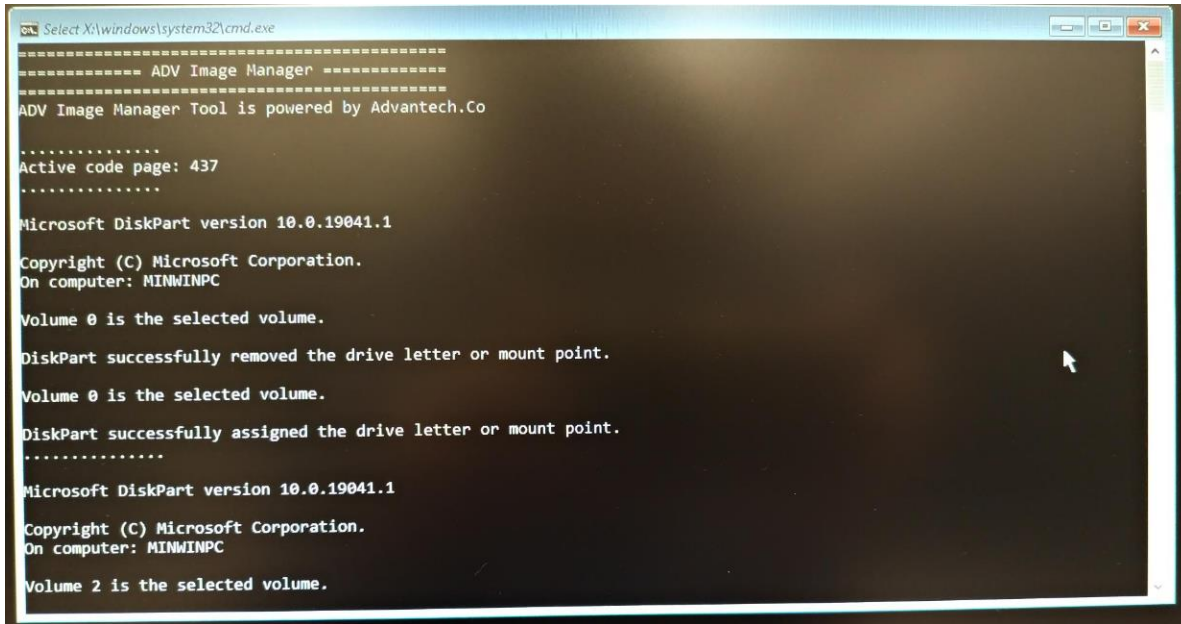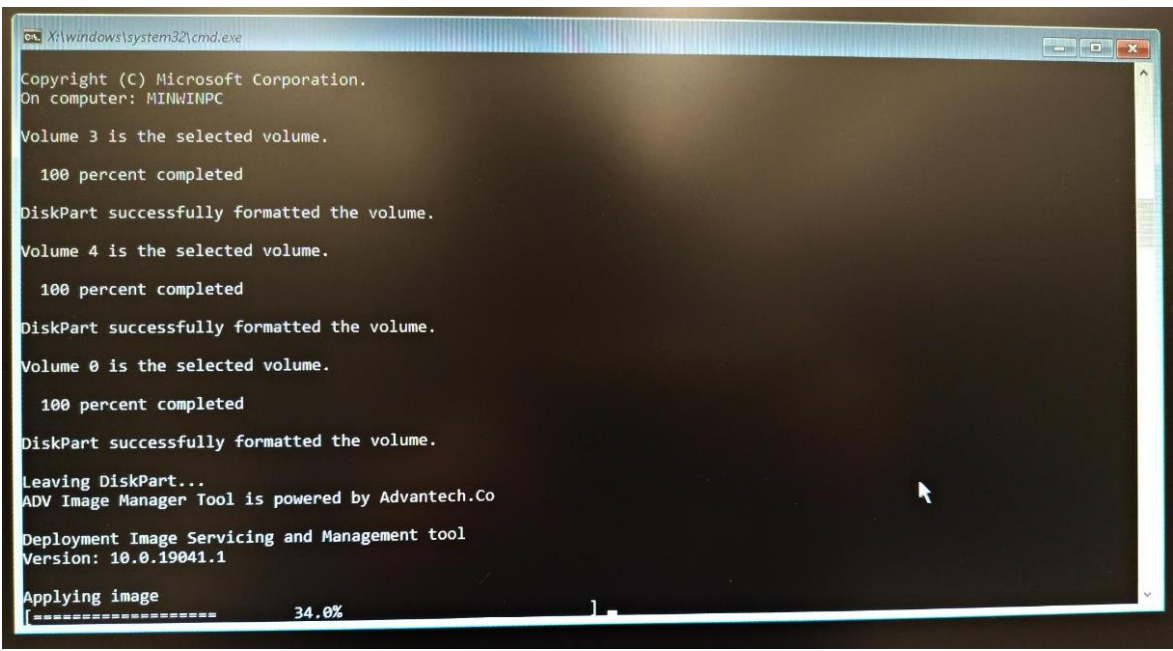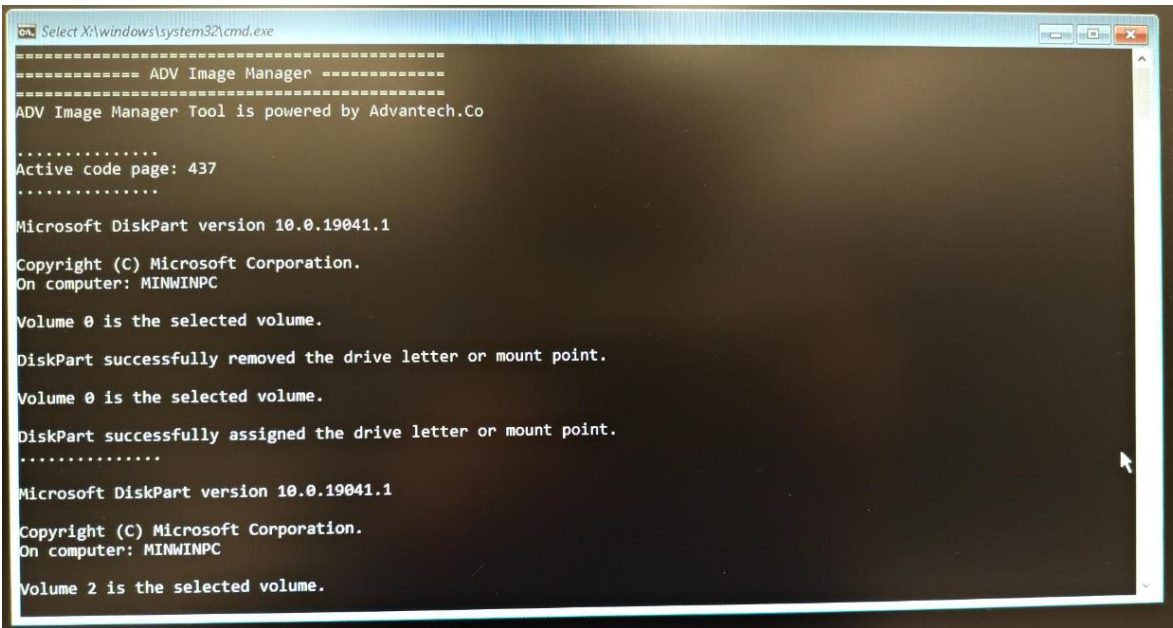
5.3 Recovery

5.3.1   Recover Image From Desktop Application

Click the "Recovery" button then press "OK". After pressing "OK", the system will restart to WinRE and start recovery.

Will recover the backup file to C:\ thus all changes after the backup file was created would be vanished.
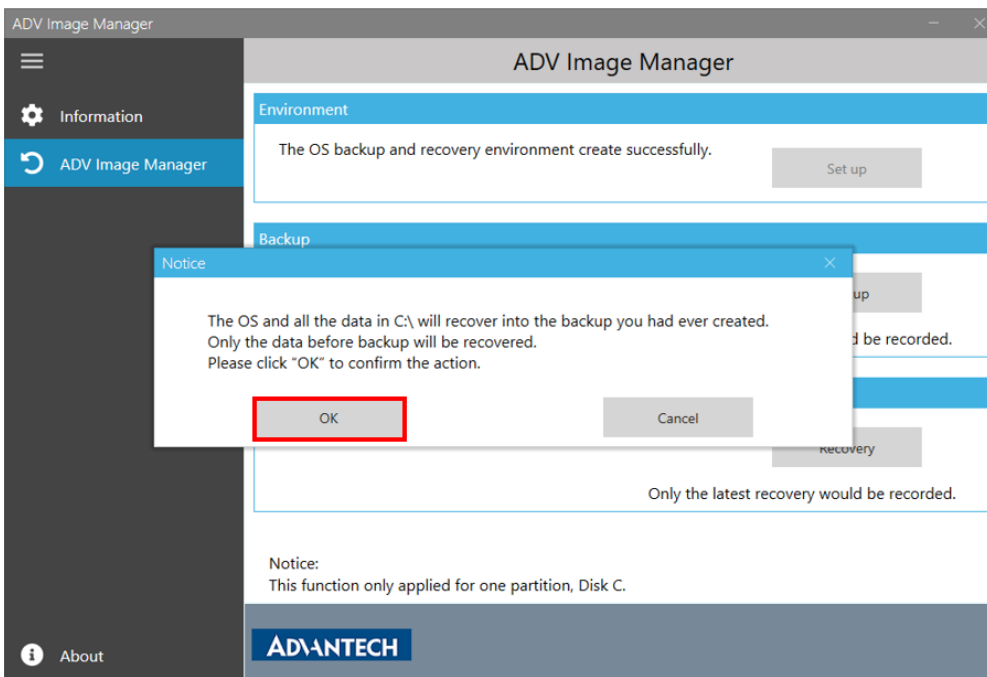
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Please don't close the command prompt and keep the system focused on the command prompt to run recovery. If the system is not focused on the command prompt, please press "Enter" in the command prompt to get the focus.

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When the recovery is finished, the system will auto restart and boot into Windows. In Windows, open the ADV Image Manager application to check the recovery result.

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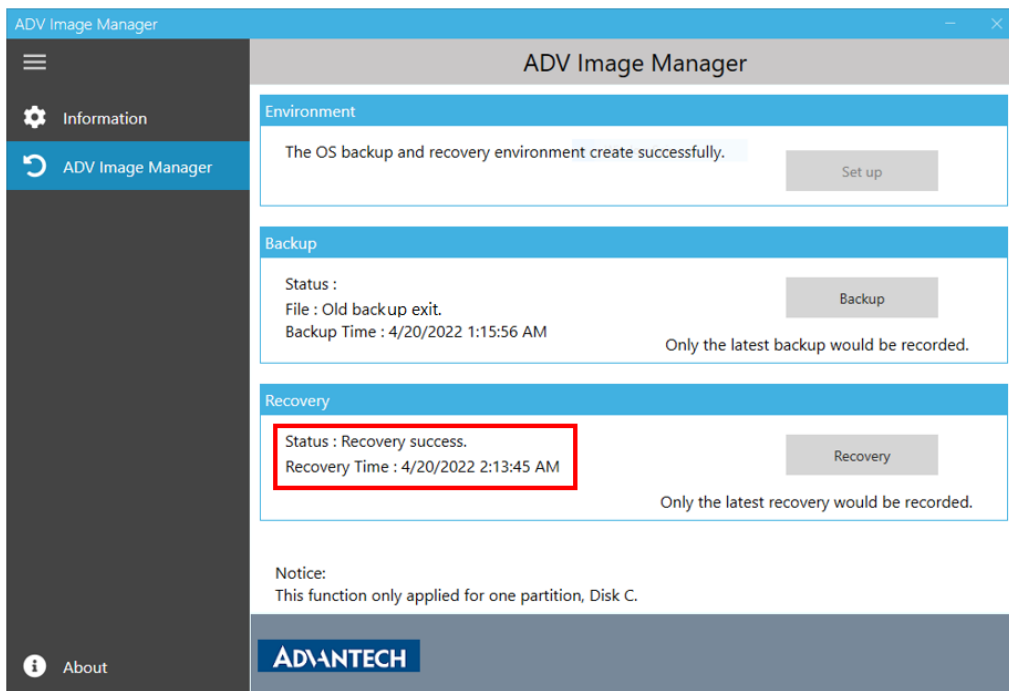
5.3.2   Recover Image From EFI Shell And WinRE

Besides starting recovery from the desktop application, ADV Image Manager can also start to recover from the WinRE. The WinRE entry points can reference the Microsoft web site. When the computer fails to enter the Windows system, you can use this way to recover your system.

Using BIOS built-in EFI Shell or the USB drive that includes EFI Shell can start the WinRE.

Use the command "**fsX:**" and "**EFI\Microsoft\Boot\bootmgfw.efi /RecoveryBCD**" to enter WinRE.
X is the selected file system's number.

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Type "2" then press "Enter" to select the Recover OS function.
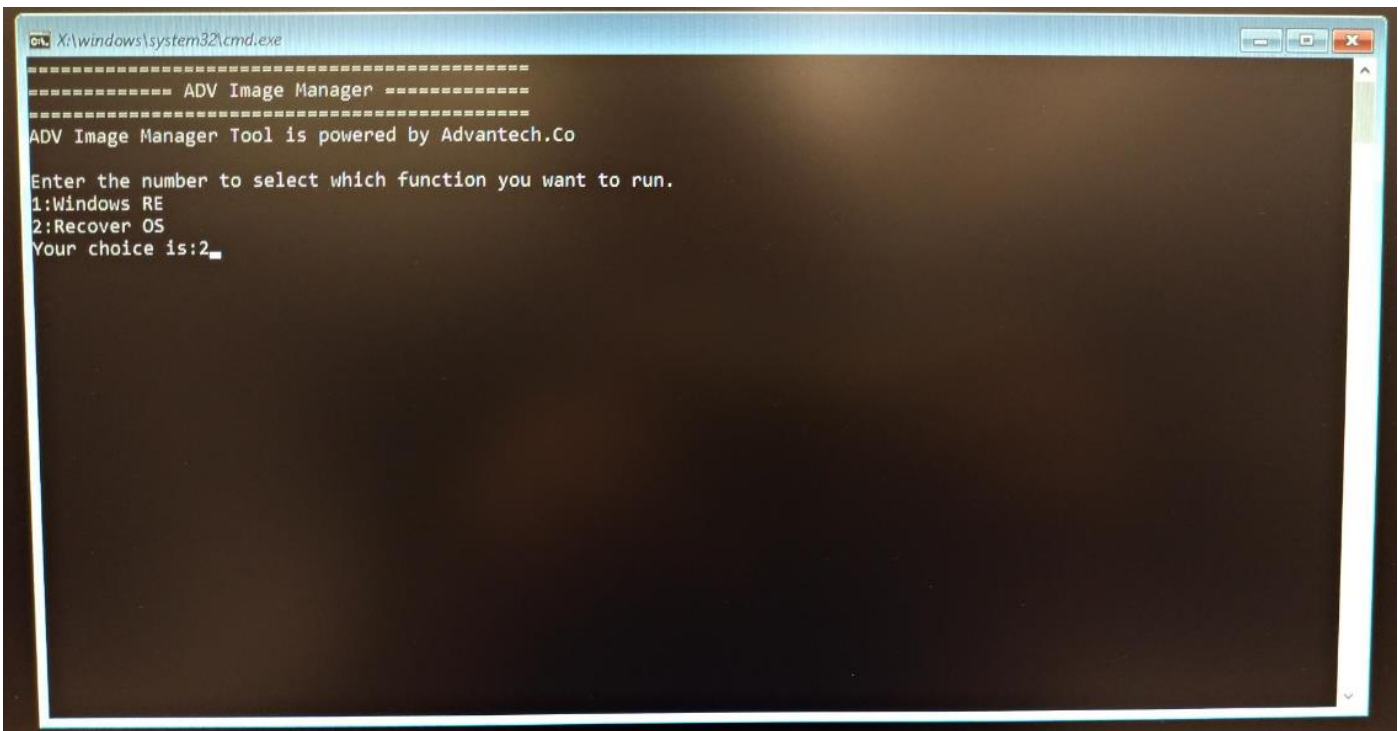
Type "Y" or "y" then press "Enter" to start recovery. After recovery, the system will reboot into Windows.

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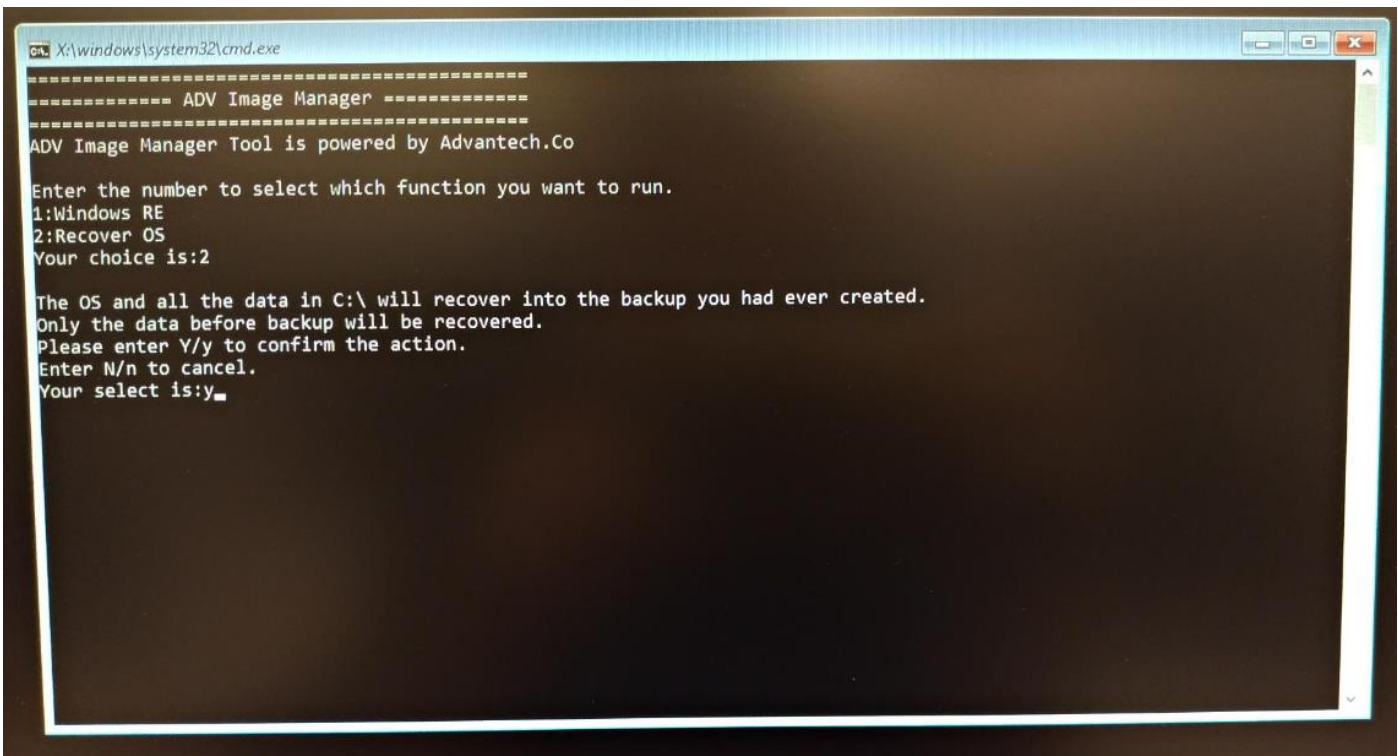
If you want to cancel the recovery, please type "N" or "n" then press "Enter" to cancel.

Other WinRE functions please check the **8.3   APPENDIX 3**.

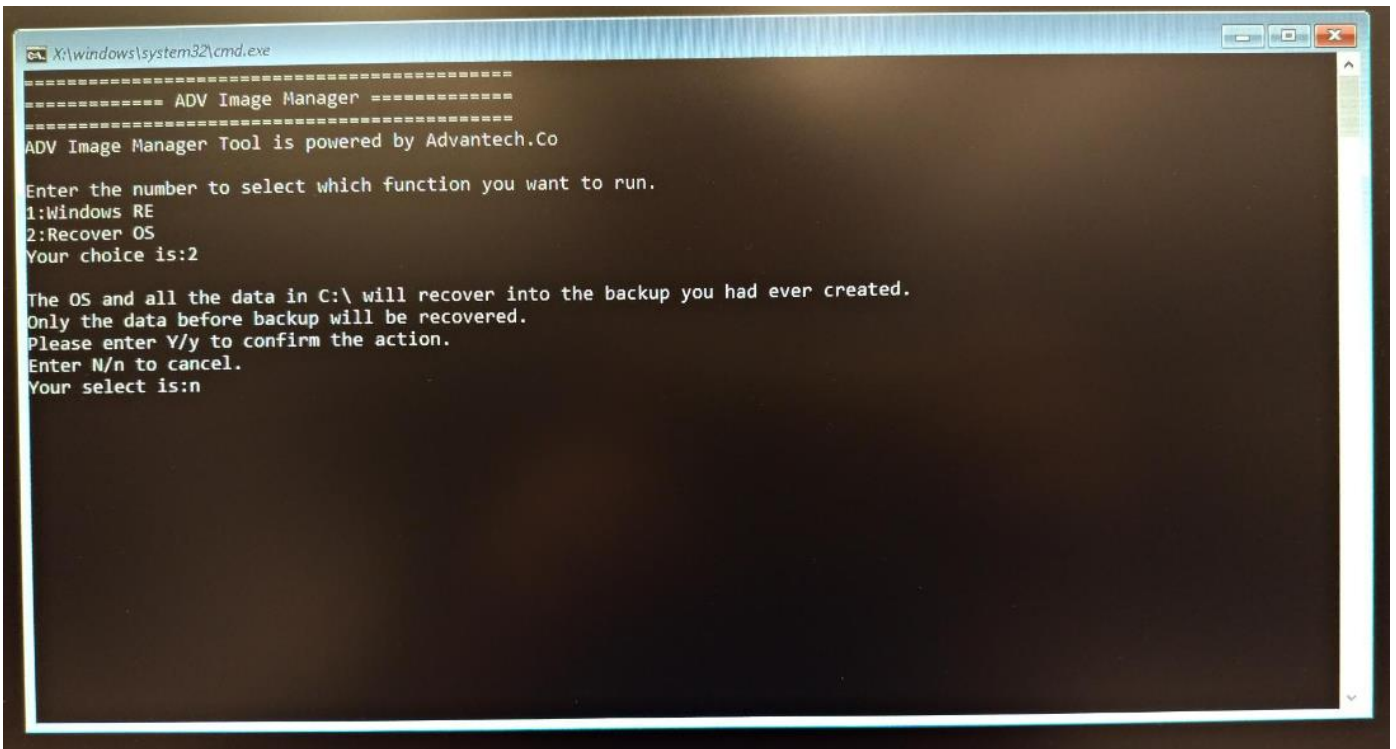Embedded IoT SW

6. Bootable USB Media

This page is to create a USB deployment media to install image. Image source could be any 2019/2021 LTSC wim file or the back file created in "ADV Image Manager" page.

6.1 Select USB device

From the drop-down list, select the USB drive. This drive will be formatted during the creation of the USB deployment media, so make sure you don't have anything important in it.

6.2 Select Image file (.wim)

In this section, you can select an ADV backup image or other wim file to create USB deployment media. If you have backed up the image in the "ADV Image Manager" page, you can make it to USB deployment media to install backup image.

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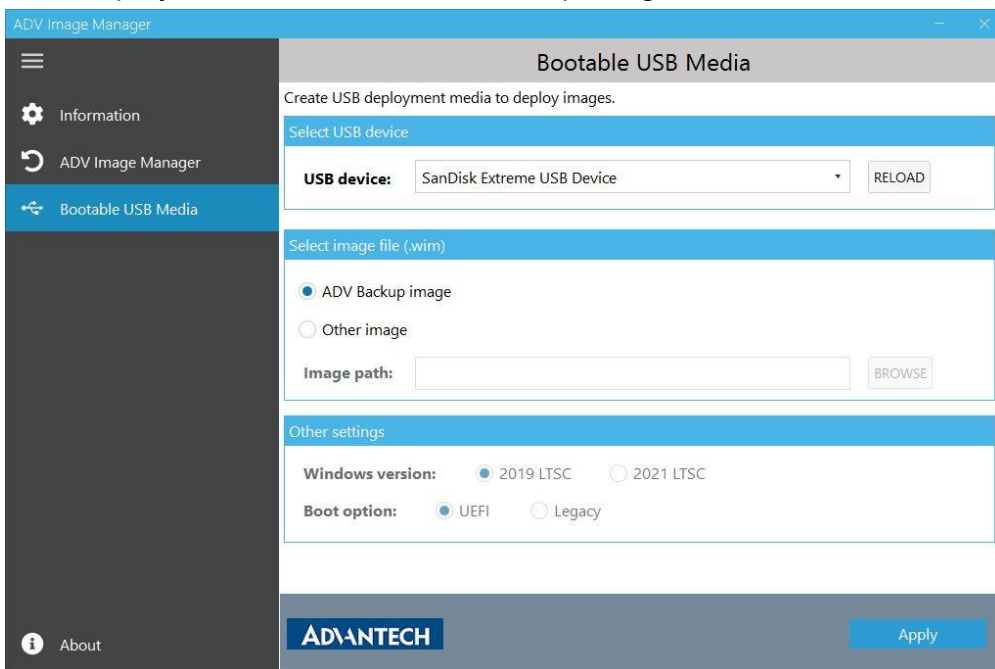
Besides ADV backup Image, you can also choose other 2019/2021 wim file to create USB deployment media.
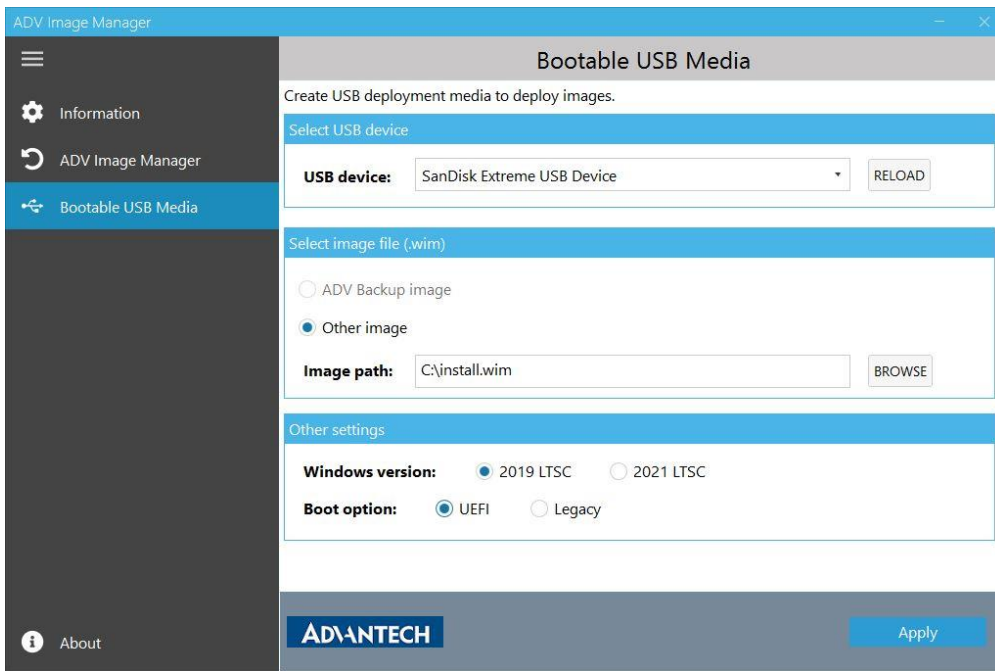

6.3 Other settings

If you choose "Other image" in 6.2 section, you need to choose "Windows version" and "Boot option" to set the correct disk partition when install image. If you select "ADV Backup image" in 6.2 section, we will automatically get these information from your system.

7.   Uninstall ADV Image Manager

During uninstall ADV Image Manager, the "ADV Backup" partition will be deleted and the image backup will also be deleted.
Make sure you want to delete the image backup then press "OK", if not, please press "Cancel".
When the "Cancel" is pressed, uninstall will be canceled and nothing will be changed.

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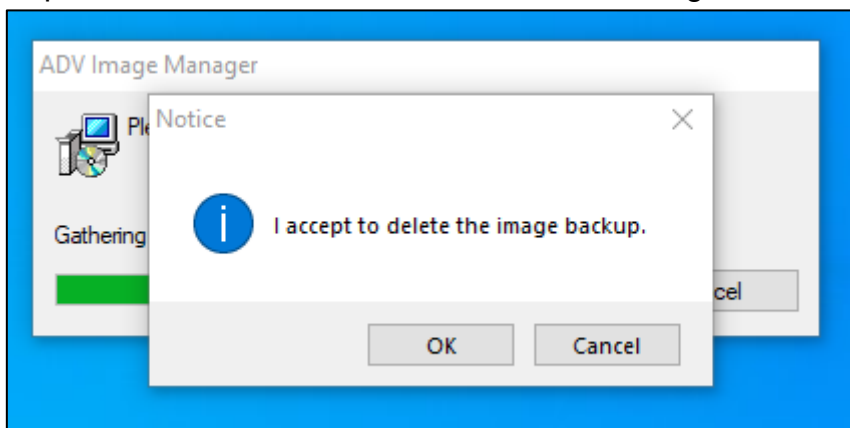
8.   APPENDIX

8.1 APPENDIX 1

Change History

Version	Change content	Status
V1.0	Initial version	Released
V1.1	1. Add Bootable USB Media page 2. Support Multi-Language	Released

8.2 APPENDIX 2

8.2.1   Windows 10 IoT Enterprise LTSC 2019

➢   First partition needs to be the "Recovery" partition.

➢   Second partition needs to be the "System" partition (EFI System Partition).

➢   Third partition needs to be the "Reserved" partition. This partition is not shown in Disk Management.

➢   The "Primary" partitions start at the fourth partition. "Primary" partitions are Windows partition and other data partitions.
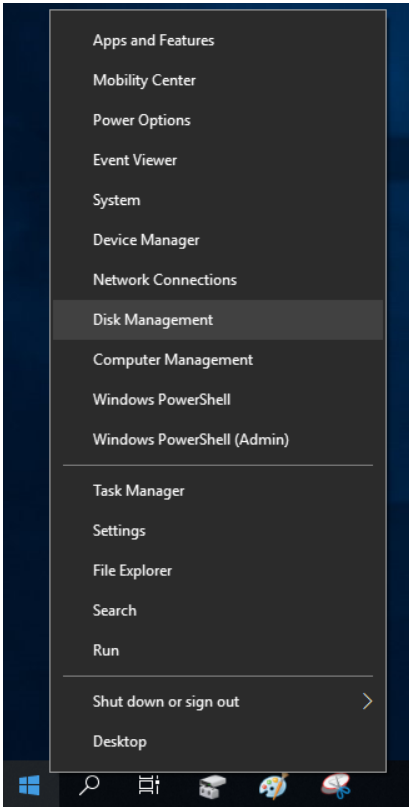
The suggestion partition layout schematic is as below.
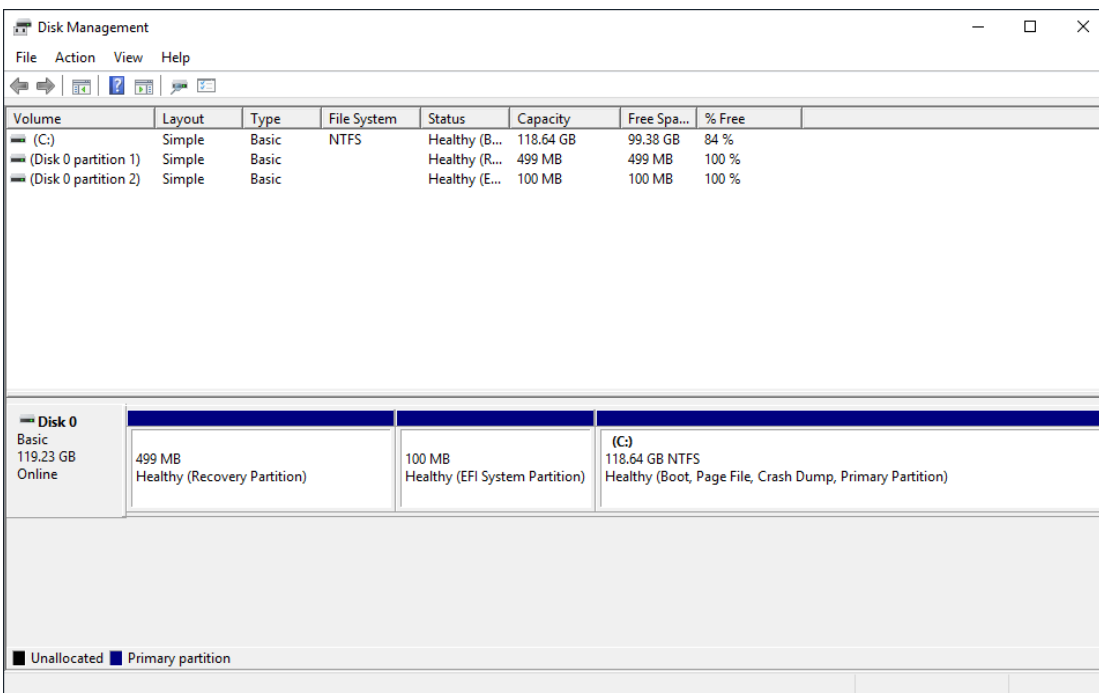
Less Offset   More Offset

| Recovery | System | Reserved | Primary | Primary | Primary | ... | Primary |

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The partition status can be checked by Disk Management. Right click at the start then click Disk Management.


The suggestion partition layout might show as below.

The partition layout can also be checked by diskpart. Search the "cmd" at the start menu then right click "Command Prompt". Left click at "Run as administrator".
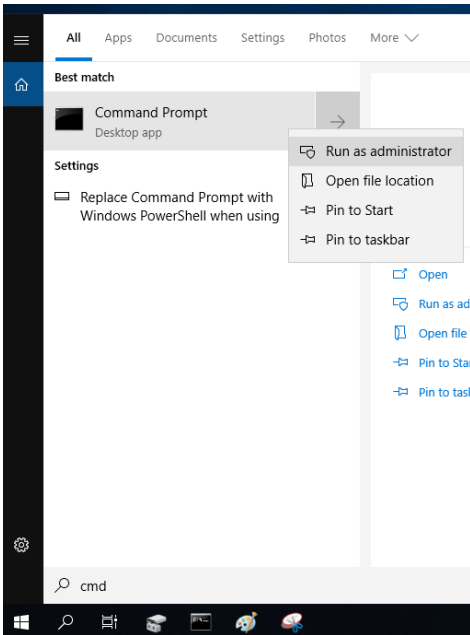
Type "diskpart" then press "Enter". After starting diskpart, use command "list disk", "select disk" and "list part" to check the partition layout. The suggestion partition layout might show as below.

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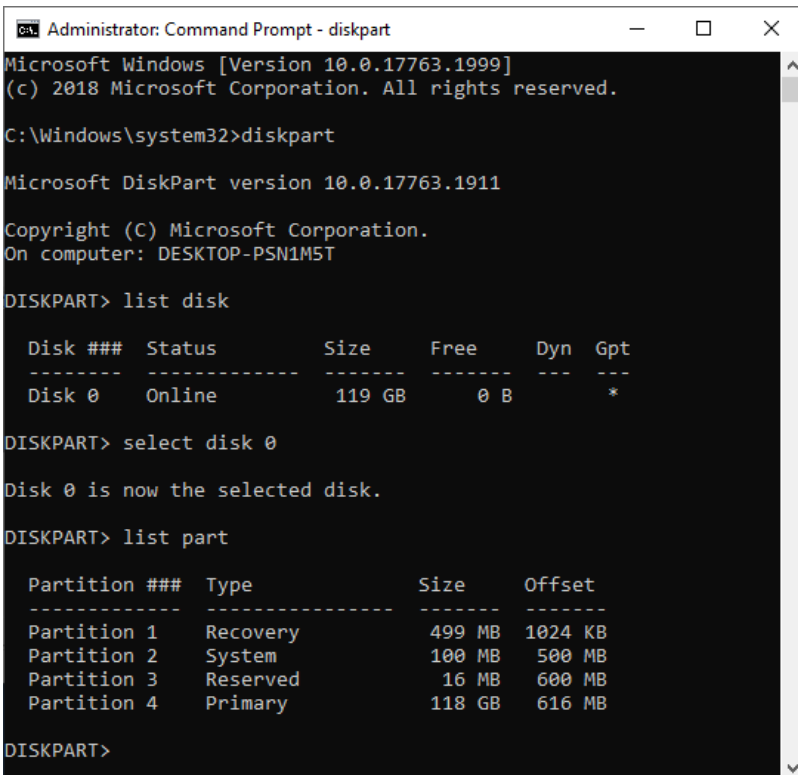
> ➢ The last partition needs enough free space to shrink.

ADV Image Manager will use the last partition to create the "ADV Backup" partition. Make sure the last partition can shrink out the space size as large as the C:\ used space.
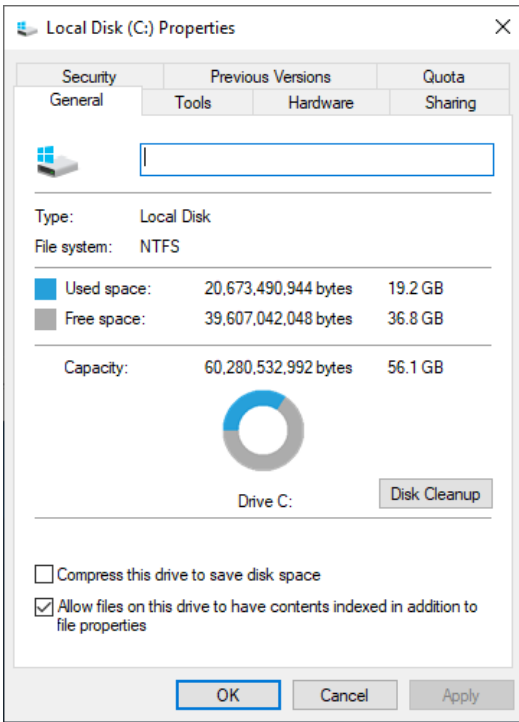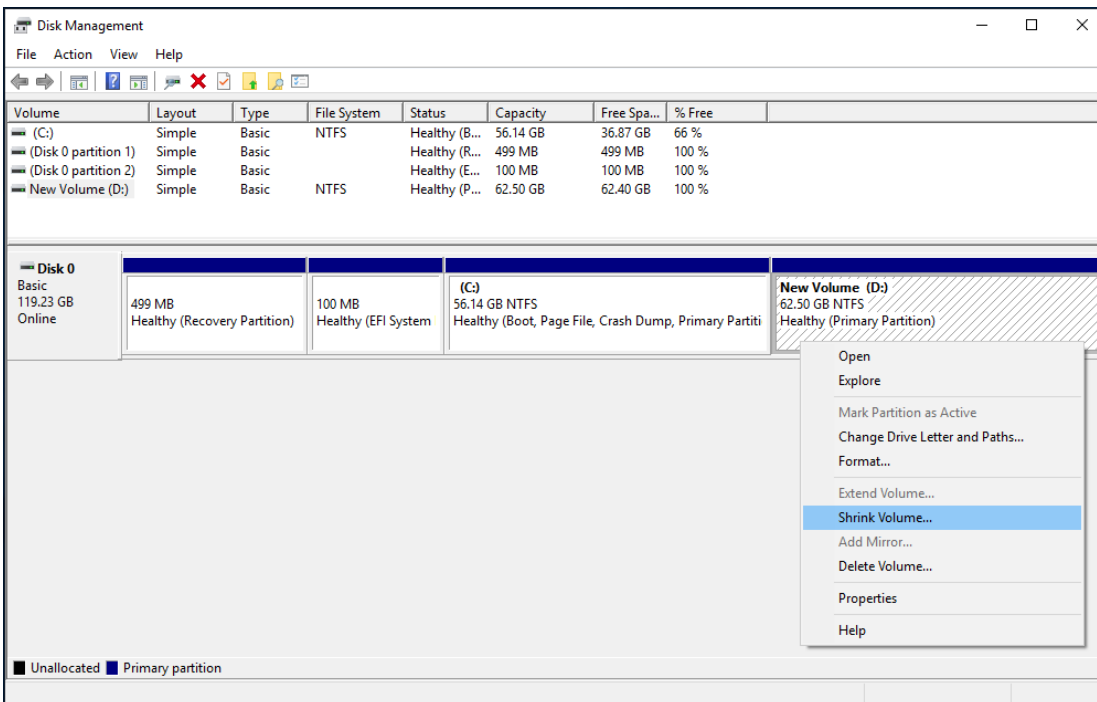
The last partition is as below in the red frame.

Less Offset   More Offset

| Recovery | System | Reserved | Primary | Primary | Primary | ... | Primary |

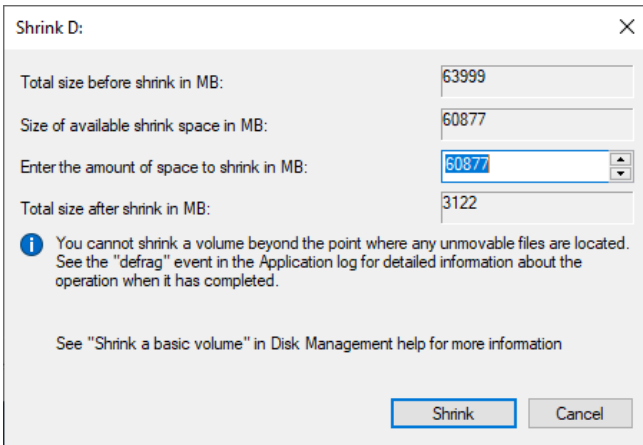C:\ used space can be checked by "Properties". Right click at the C:\ partition and select the "Properties".

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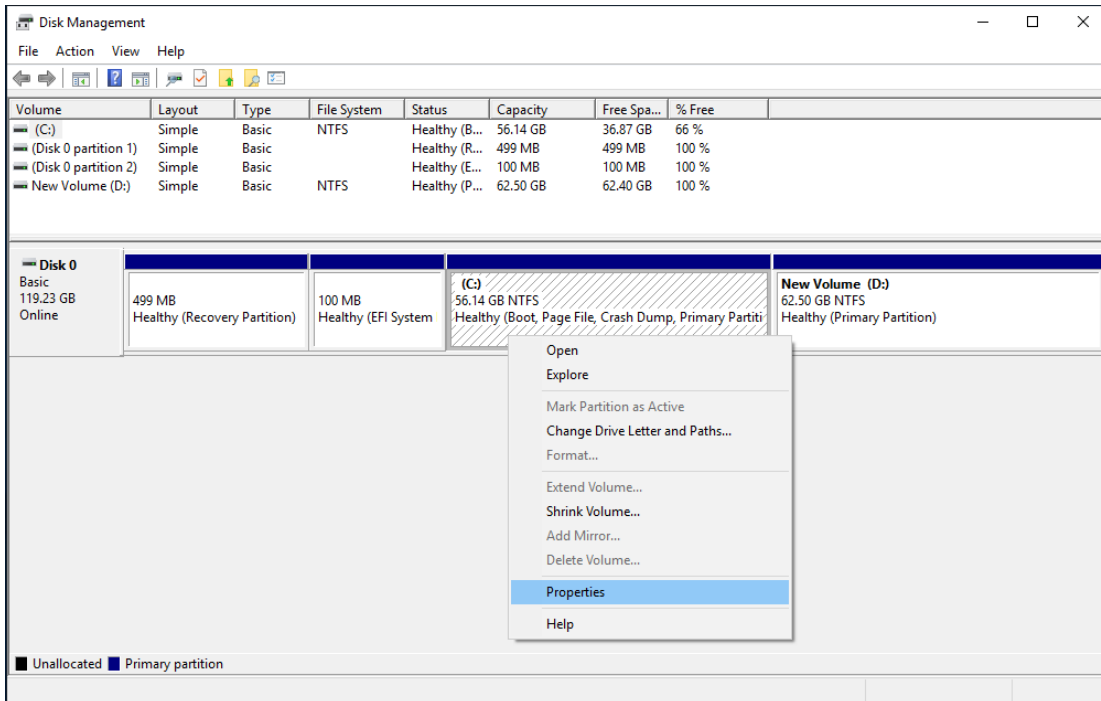
The maximum shrink space can be checked by "Shrink Volume". Right click at the last partition and select the "Shrink Volume".
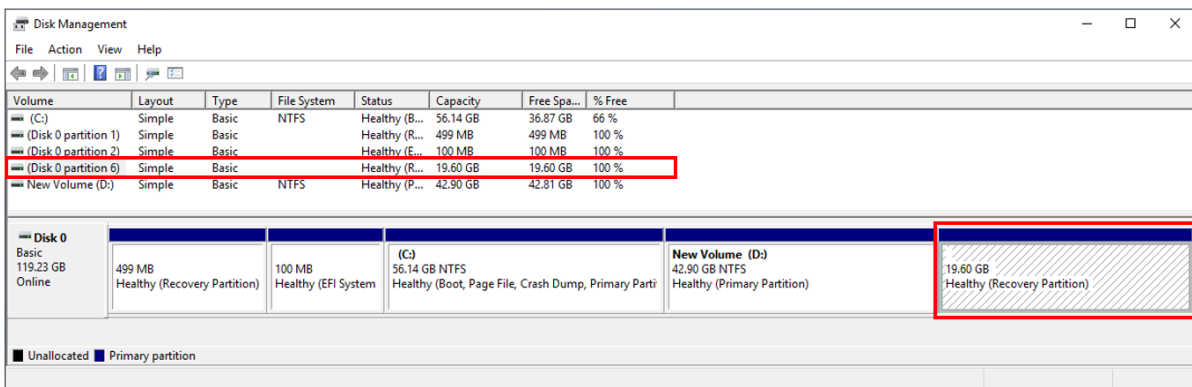
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"ADV Backup" partition will be created as below schematic.

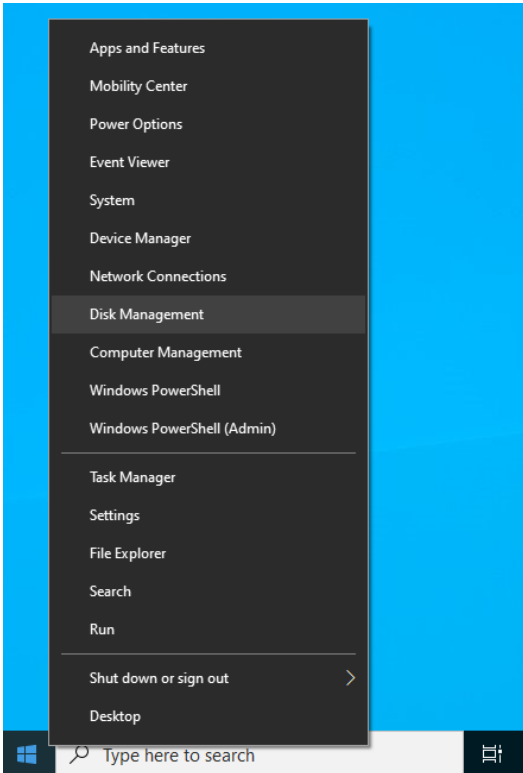For example, "ADV Backup" partition is as below in the red frame. Please do not modify this partition.

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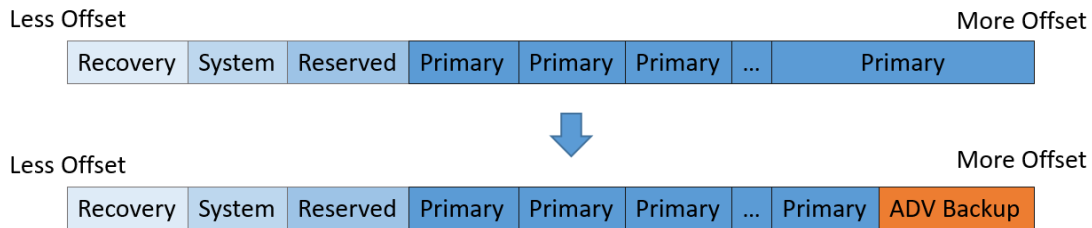
8.2.2   Windows 10 IoT Enterprise LTSC 2021

➢   First partition needs to be the "System" partition (EFI System Partition).
➢   Second partition needs to be the "Reserved" partition. This partition is not shown in Disk Management.
➢   The "Primary" partitions are between the second partition and the last partition. "Primary" partitions are Windows partition and other data partitions.
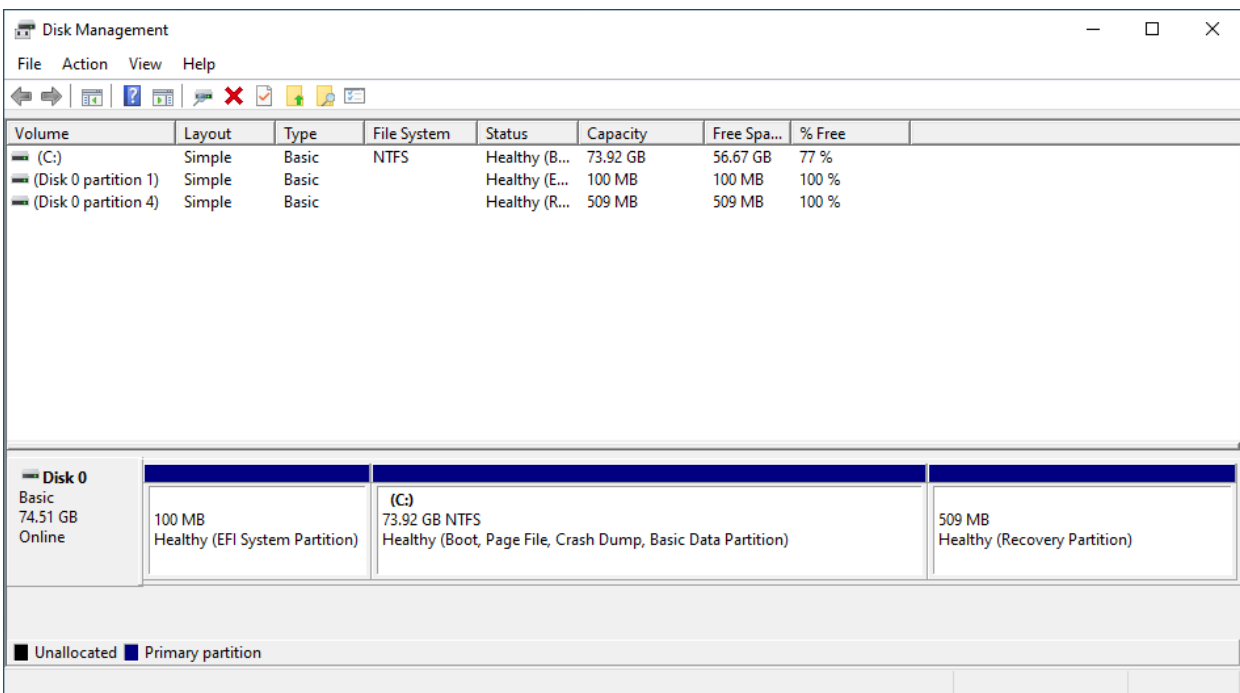➢   The last partition needs to be the "Recovery" partition.

The suggestion partition layout schematic is as below.

Less Offset   More Offset

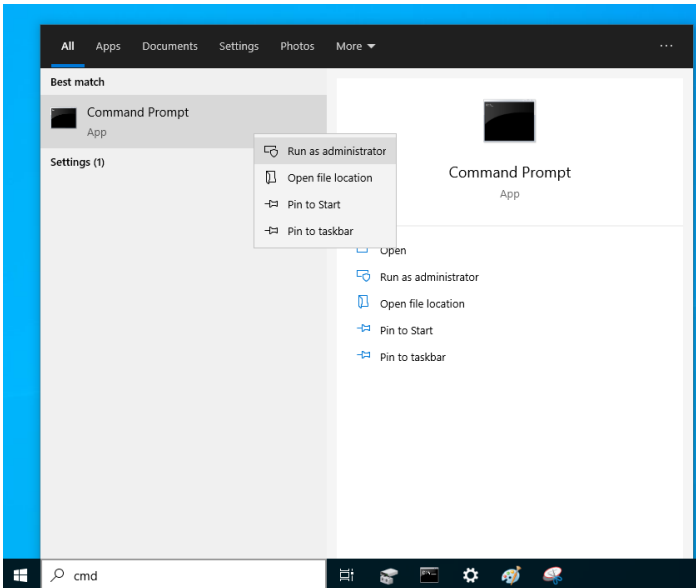| System | Reserved | Primary | Primary | Primary | ... | Primary | Recovery |

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The partition status can be checked by Disk Management. Right click at the start then click Disk Management.

The suggestion partition layout might show as below.

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The partition layout can also be checked by diskpart. Search the "cmd" at the start menu then right click "Command Prompt". Left click at "Run as administrator".

Type "diskpart" then press "Enter". After starting diskpart, use command "list disk", "select disk" and "list part" to check the partition layout. The suggestion partition layout might show as below.


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➢   The last "Primary" partition needs enough free space to shrink.
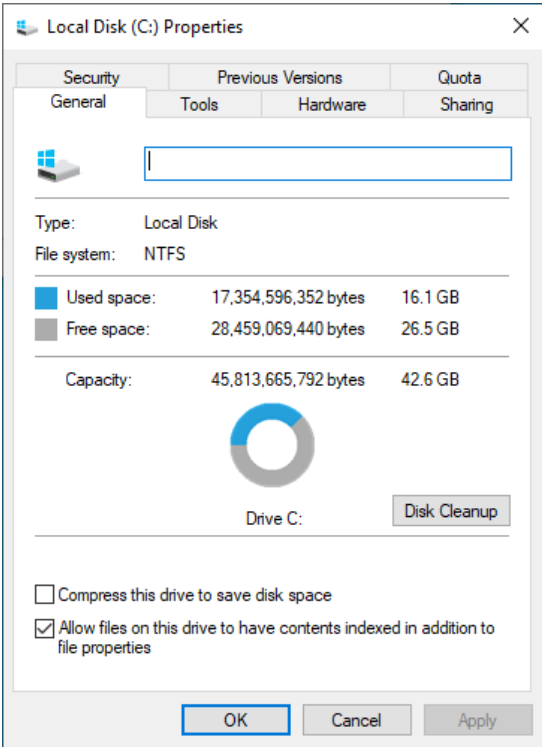
ADV Image Manager will use the last "Primary" partition to create the "ADV Backup" partition. Make sure the last "Primary" partition can shrink out the space size as large as the C:\ used space.

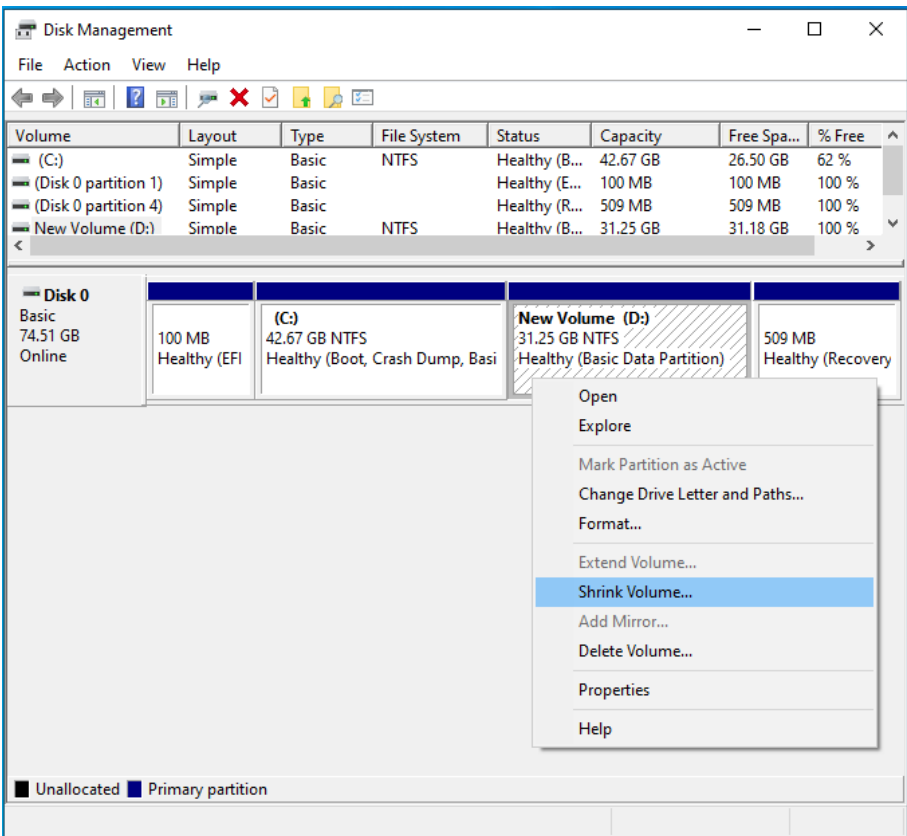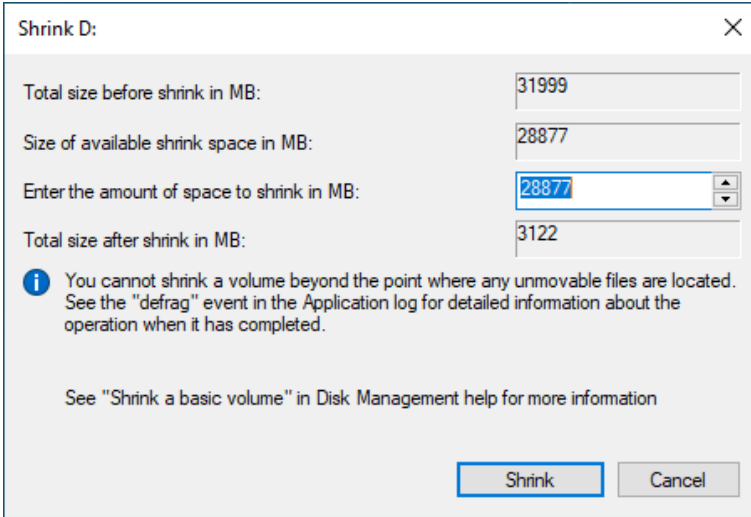The last "Primary" partition is as below in the red frame.

C:\ used space can be checked by "Properties". Right click at the C:\ partition and select the "Properties".

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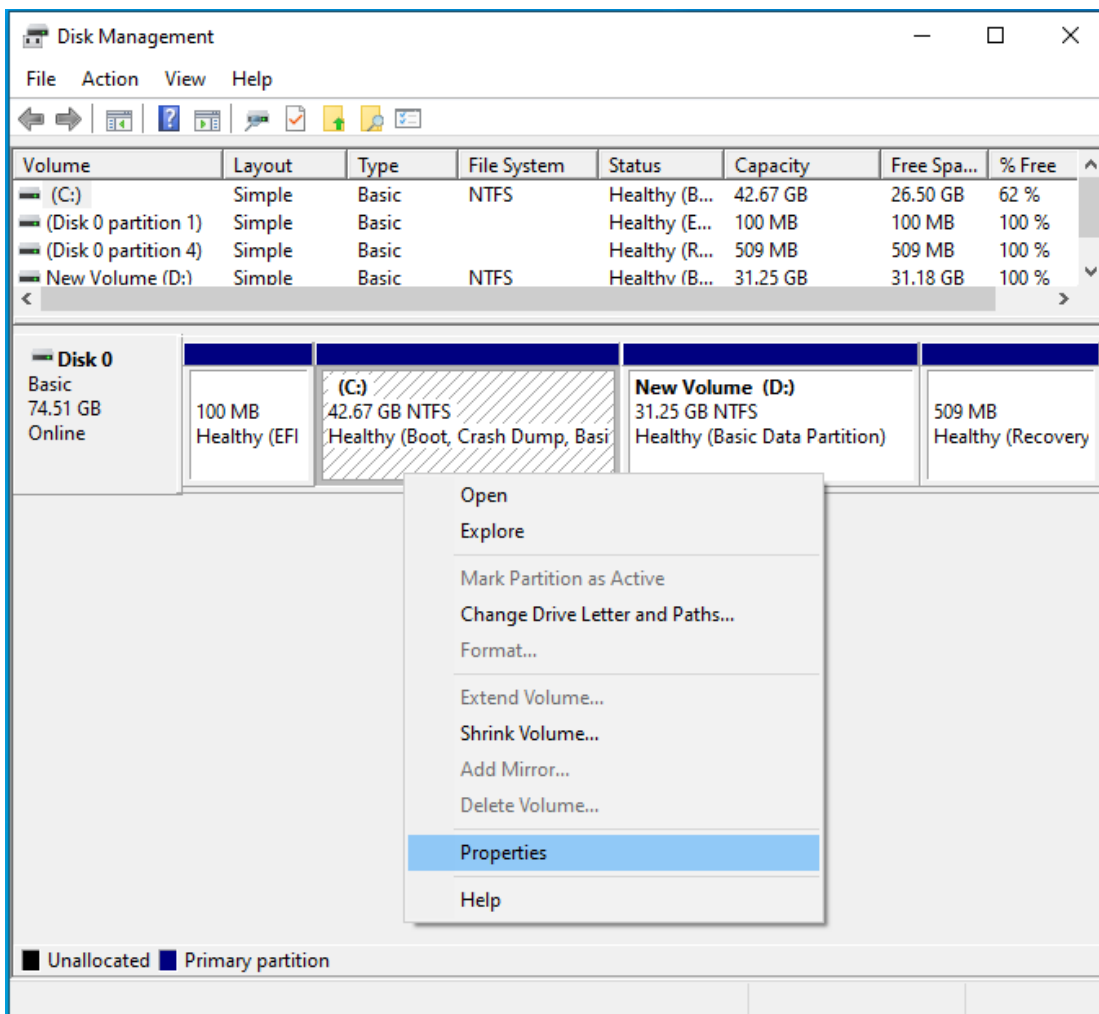
The maximum shrink space can be checked by "Shrink Volume". Right click at the last "Primary" partition and select the "Shrink Volume".
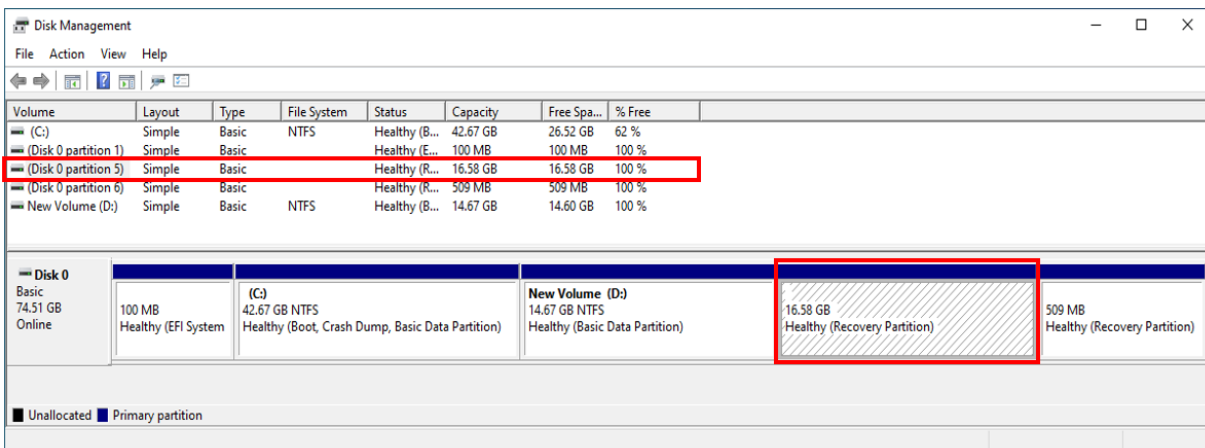

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"ADV Backup" partition will be created as below schematic.

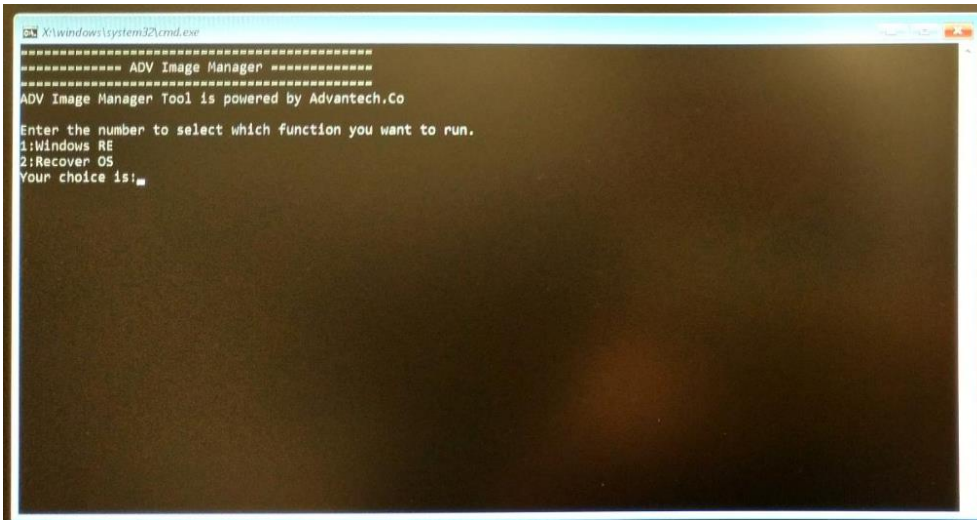For example, "ADV Backup" partition is as below in the red frame. Please do not modify this partition.

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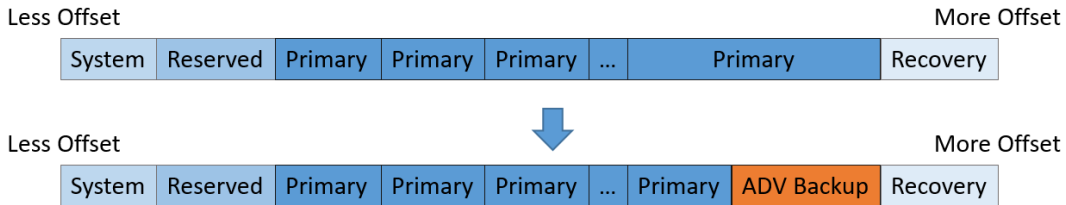
8.3 APPENDIX 3

Other WinRE Functions

After entering WinRE, the command prompt as below will be shown.
Type "1" then press "Enter" to select the Windows RE function.

After that, the WinRE function will start up as below.
Please keep the ADV Image Manager command prompt windows running at the back and don't close it.

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