



# Windows 10

## Upgrading to Windows 10

### Reference Guide

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# About This Document



## Audience

This document is created to introduce the upgrade journey to Windows 10 from older Windows versions.



## Summary

This document focuses on providing answers to the following questions:

- How can I upgrade Windows to Windows 10?
- How can I activate Windows 10?
- How can I recover and roll back to older Windows OS?
- How can I troubleshoot any driver compatibility issues?



## In Progress

At the time of writing, Windows 10 is in the preview stage of development and some feature behavior and feature UI change prior to reaching Release to Web (RTW) is inevitable. Every effort has been made to describe the final RTM behavior. Updates will be made in the Windows 10 Training and in subsequent product communications.

# Upgrading to Windows 10

## Overview

In September of 2014, Microsoft CEO Satya Nadella announced Windows 10 as the newest member of the Windows NT family of operating systems developed by Microsoft.

Some key features in Windows 10 include:

- Universal apps for all platforms using Windows 10
- Cortana integration in the desktop operating system
- New look for the Start Menu
- Microsoft Edge (code-named Project Spartan)

This document's focus is on how to upgrade to Windows 10 from previous Windows versions. Feature coverage and other product details and troubleshooting will be included in the Windows training package being released in June 2015.



If you want to know more about Windows 10, you can click the link below.

- <http://windows.microsoft.com/en-us/windows-10/about>

## General information

### Minimum and Recommended Requirements

The minimum and recommended hardware requirements are listed below.

**Table 1: Windows 10 Hardware requirements**

Requirement	Minimum	Recommended
Processor	<ul style="list-style-type: none"> <li>• 1 GHz</li> <li>• IA-32 or x64 Architecture</li> <li>• Support for PAE, NX and SSE2</li> </ul>	<ul style="list-style-type: none"> <li>• x64 architecture</li> <li>• Second Level Address Translation (SLAT) support for Hyper-V</li> </ul>
Memory (RAM)	<ul style="list-style-type: none"> <li>• IA-32: 1 GB</li> <li>• x64 edition: 2 GB</li> </ul>	<ul style="list-style-type: none"> <li>• 4 GB</li> </ul>
Graphics Card	<ul style="list-style-type: none"> <li>• Microsoft DirectX 9 graphics device with WDDM driver</li> </ul>	<ul style="list-style-type: none"> <li>• DirectX 10</li> </ul>
Display screen	<ul style="list-style-type: none"> <li>• 800x600 pixels</li> </ul>	<ul style="list-style-type: none"> <li>• 1024x768 pixels (To access Windows Store)</li> </ul>

Requirement	Minimum	Recommended
Input device	Keyboard and mouse	Multi-touch display
Hard disk space	<ul style="list-style-type: none"> <li>16 GB for IA-32</li> <li>20 GB for x64</li> </ul>	Same as minimum
Other	Internet connectivity	

## Eligibility

Microsoft has announced that it will offer a free upgrade to Windows 10 for new or existing Windows devices that are activated:

- Windows 7 SP1
- Windows 8.1 with the Spring 2014 Update or newer updates
- Windows 10 Technical preview
- Upgrading using media is allowed for Windows 7 RTM, Windows 8 RTM and Windows 8.1 RTM

This offer is valid for the first year of the public launch of Windows 10\*. Customers on prior versions, for example, Windows 8, will need to upgrade to the versions above prior to being able to upgrade to Windows 10.



\*It is our intent that most of these devices will qualify, but some hardware/software requirements apply and feature availability may vary by device. Devices must be connected to the internet and have Windows Update enabled. ISP fees may apply. Windows 7 SP1 and Windows 8.1 Update required\*\*. Some editions are excluded: Windows 7 Enterprise, Windows 8/8.1 Enterprise, and Windows RT/RT 8.1. Active Software Assurance customers in volume licensing have the benefit to upgrade to Windows 10 enterprise offerings outside of this offer. We will be sharing more information and additional offer terms in coming months.

\*\*Windows 7, Windows 8 and Windows 8.1 RTM devices are eligible after updating to either Windows 7 SP1 or to Windows 8.1 Update.

## Upgrade Journey

### Available upgrade options

Windows 10 is available through the following upgrade paths:

- Windows Update
- Windows 10 Upgrade Program allows retailers to offer assistance in upgrading to Windows 10 at their Tech Bench locations; either for new device purchase where the device still has Windows 8.1 or with customer's existing Windows 7 or Windows 8.x device.

- Online USB media creation or ISO download
  - This model enables the *download once, deploy to many* scenario, which is a scalable for users with multiple devices.

Some limitations as the following exist:

- Upgrade is only allowed when the download OS is activated
- User cannot install Windows while running in safe mode.
- Installation of Windows 10 by booting from media will not allow the user to benefit from the free upgrade offer as Windows setup cannot validate the underlying OS is activated.

Additional details concerning specific supported combinations of source OS upgrading to Windows 10 are listed in the following table.

OS and Path	Media (ISO)	Windows Update – Classic (accessed via Control Panel)	Windows Update – Modern (accessed via PC Settings)
Windows XP/Vista <small>(not eligible for Free Upgrade)</small>	 <small>(Must boot to media and run legacy setup clean install Only)</small>		
Windows 7			
Windows 7 SP1			
Windows 8/8.1			
Windows 8.1 + Windows 8.1 Update			
Windows 10 Technical Preview			
Windows RT <small>(Windows RT is not part of the Windows 10 launch)</small>			

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 Legend:

-  = supported upgrade path
-  = not supported, but valid upgrade path
-  = unsupported and not a valid upgrade path

---

## What you keep when you upgrade

The table below lists what you keep when you upgrade.

**Table 2: What you keep when you upgrade**

If you're running	You can keep
Windows 8.1 Update	Windows settings, personal files and most apps
Windows 7 SP1	Windows settings, personal files and most apps
Windows 7 RTM, Windows 8 RTM and Windows 8.1 RTM	Installation via media allows users to keep Windows settings, personal files and most apps

## How long does an upgrade take?

At the time of writing, build 10074 publically released to the Insider Program was showing that better than 50% of users had an upgrade time of less than 60 minutes. This of course depends heavily on system specifications and Internet connection of the user. Modern SSD devices are much faster.

## Windows Update: Classic Hub Entry Point without Compatibility Issues

This section shows the "golden path" - upgrading from an existing, genuine, activated copy of Windows 7 SP1 or Windows 8.1 Update, with no compatibility issue, to Windows 10.

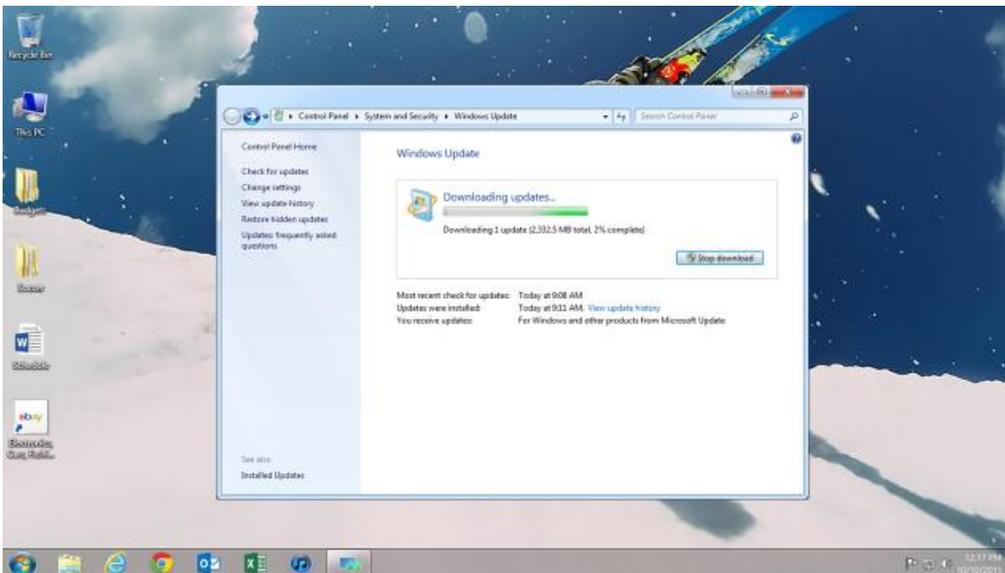
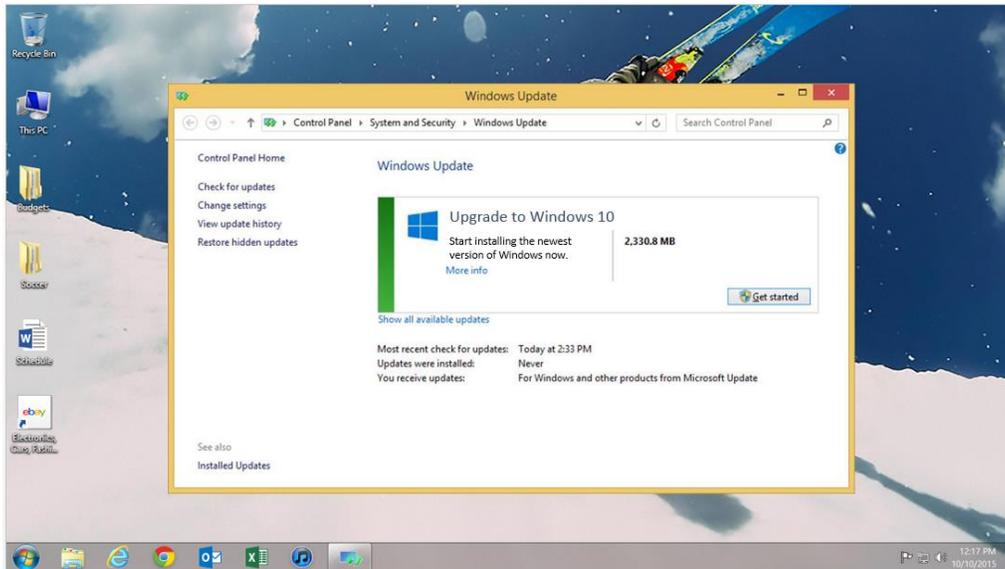
### Step 1: Pre-Release KB Install

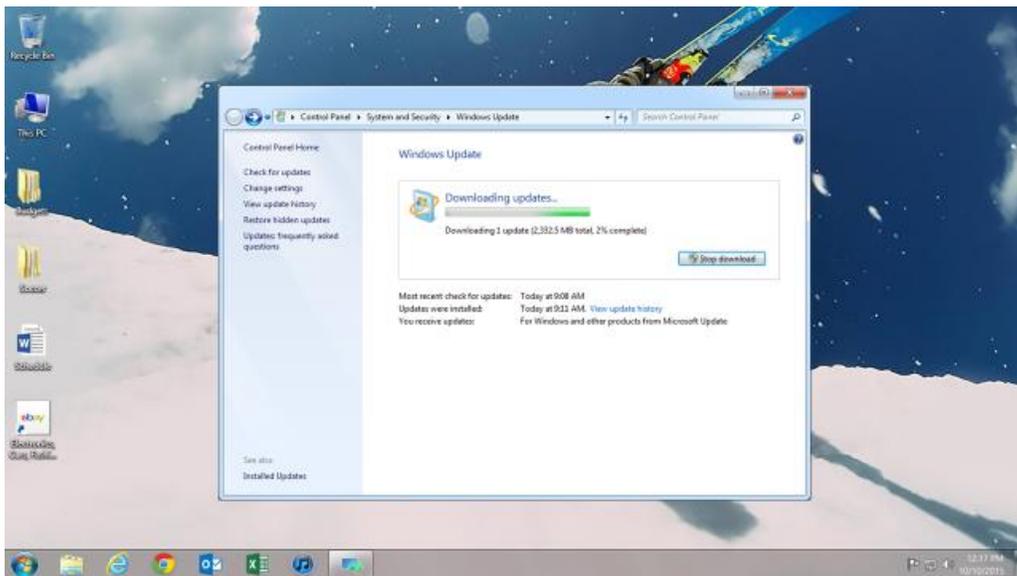
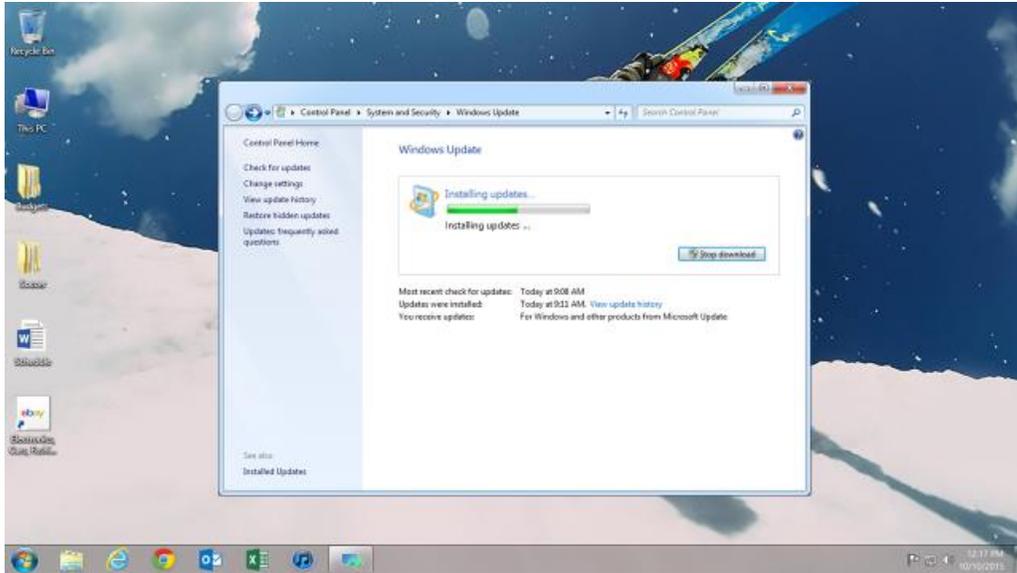
Installing this KB will enable the WU Client to be able upgrade to Windows 10. These will come sometime before RTW.

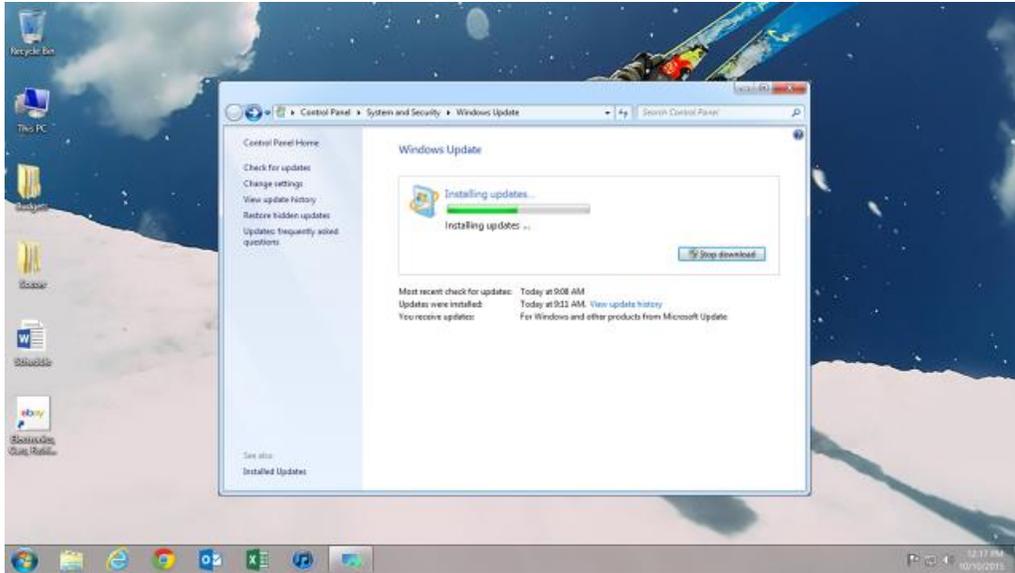
- KB3065988 (Win8.1 Update)
- KB3065987 (Win7 SP1)

## Step 2: Get the Upgrade through Windows Update and Accept EULA

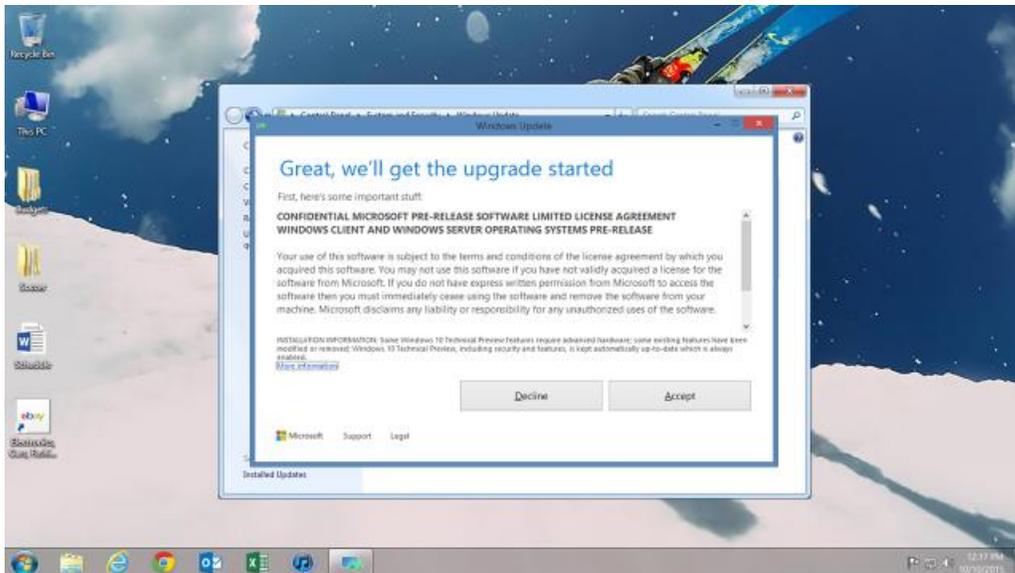
1. When RTW arrives, experiences differ based on customers Windows Update settings. For example:
  - Install updates automatically: Customer goes to Windows Update and sees the screen below.
  - Never check for updates: Customer goes to Windows Update and checks for updates manually. Once they do this, they will see this screen and click **Get Started**.



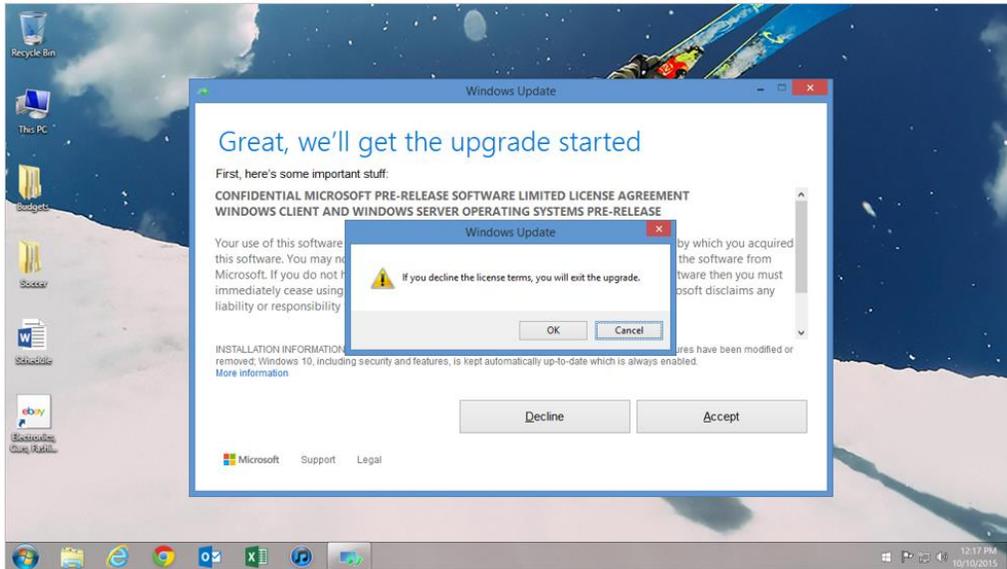




2. Click **Accept** to accept the end-user licensing agreement (EULA). Clicking **Decline** prompts an exit of the upgrade.



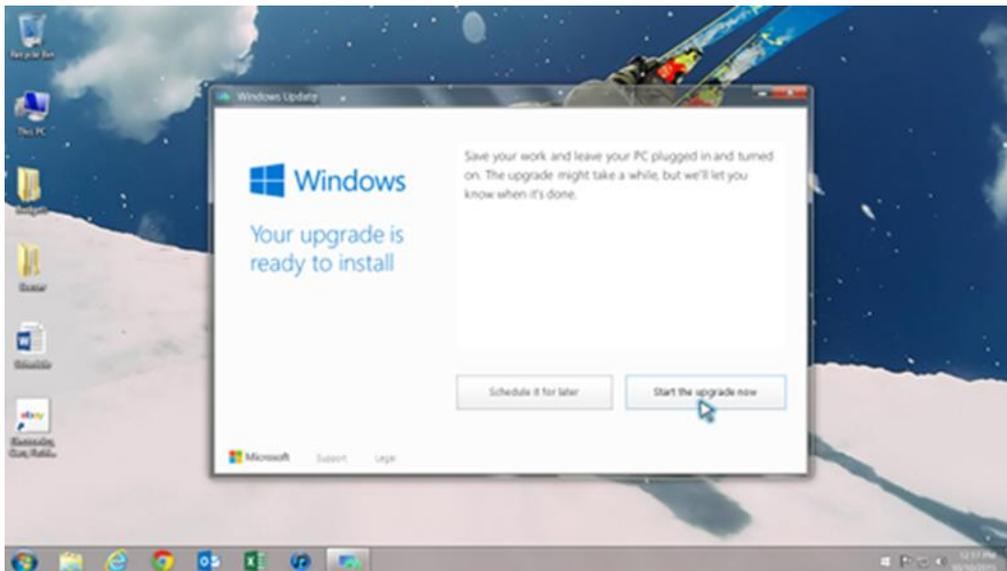
**Note:** If customer declines and accepts later, they will need to re-download the update, and accept the EULA.



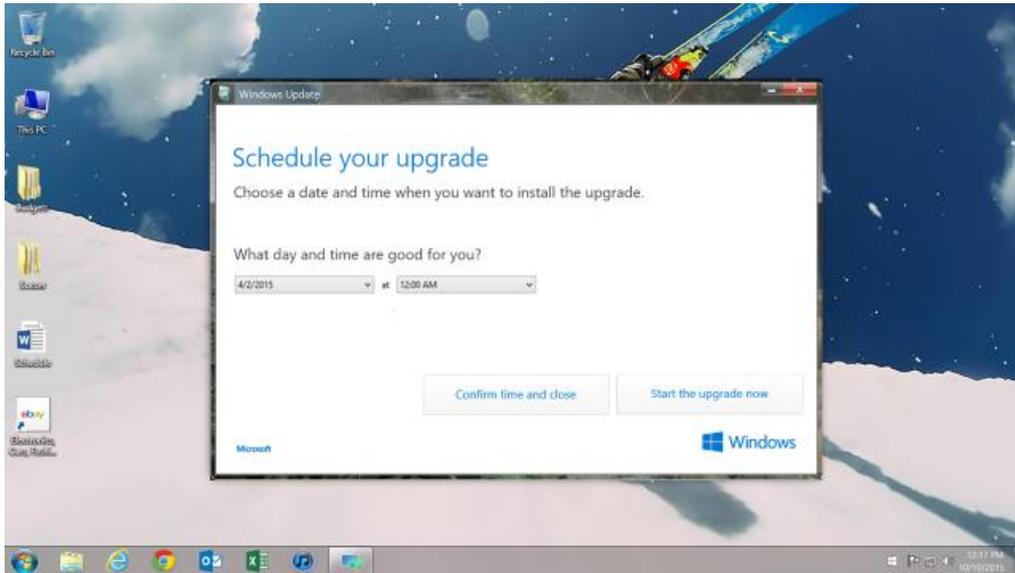
### Step 3: Start or Schedule the Upgrade

Customer is provided two options:

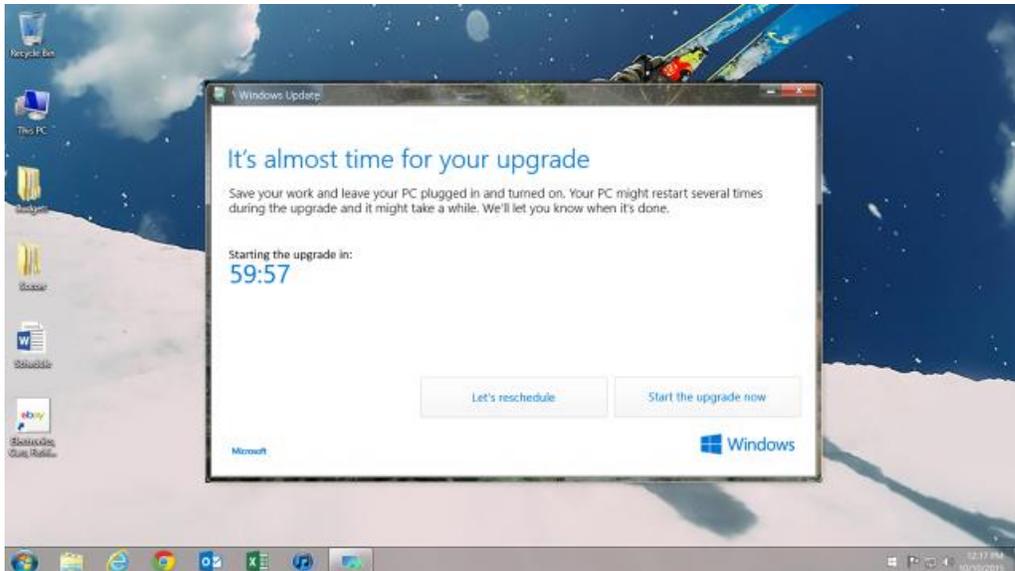
- Select **Start Upgrade now** to upgrade immediately.



- Click **Schedule for later** to schedule the upgrade for a different time and/or day.

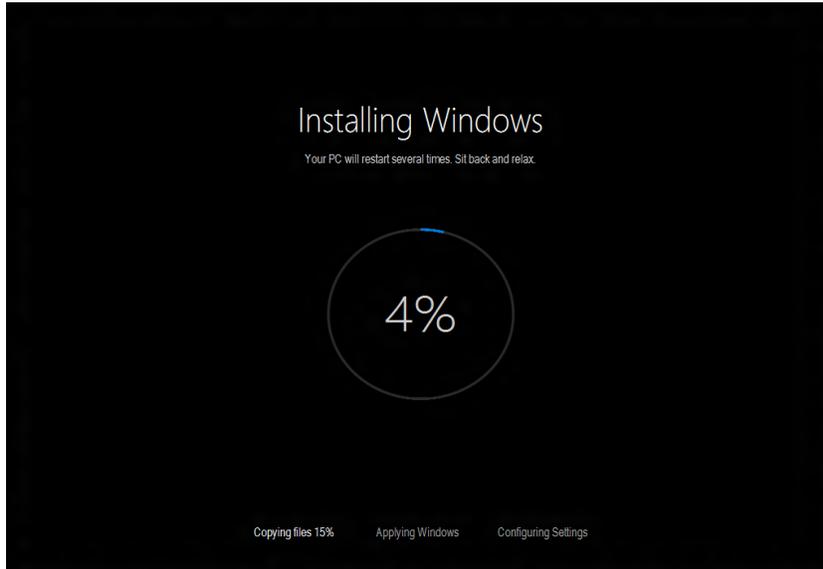


If **Schedule your upgrade** is selected, once the time/date gets close (an hour before) the following message will prompt you to reschedule or start the upgrade. You can currently reschedule as many times as you want.



#### Step 4: Install the Upgrade

System restarts and the upgrade installs. (UI not final)

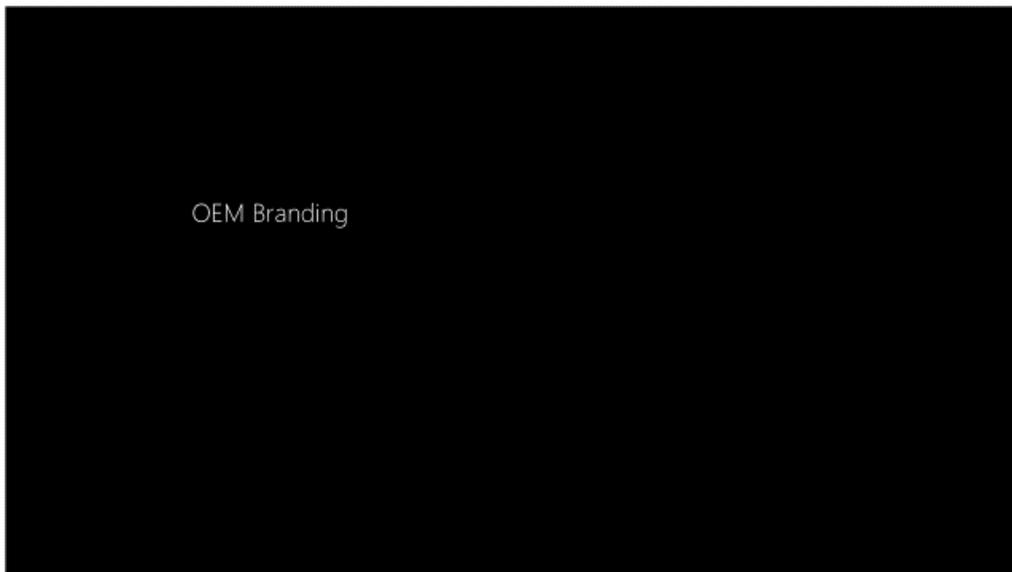


#### Copying Files, Applying Windows, Configuring Settings

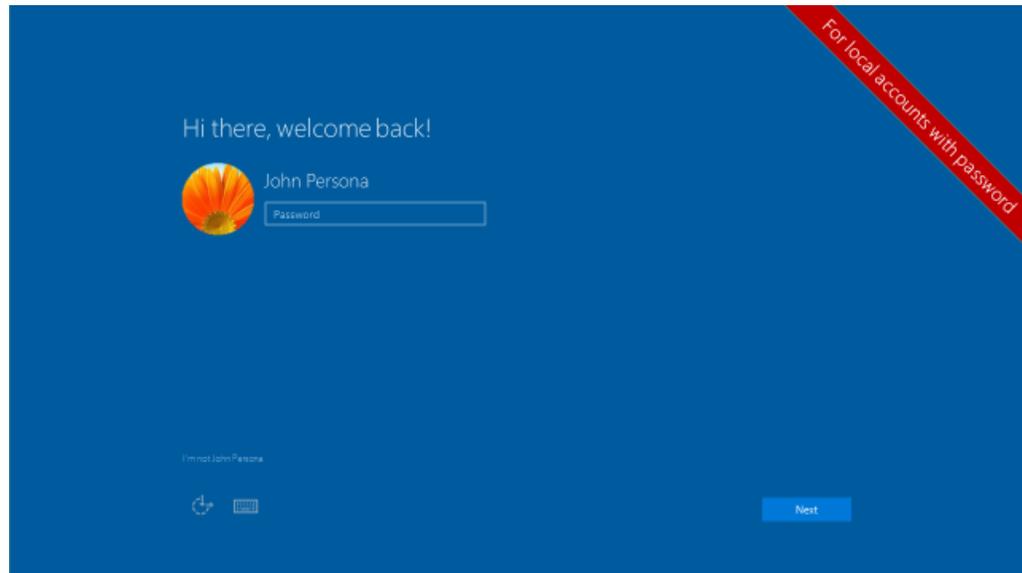
#### Step 5: Completing Setup

This step automatically starts once the installation is complete.

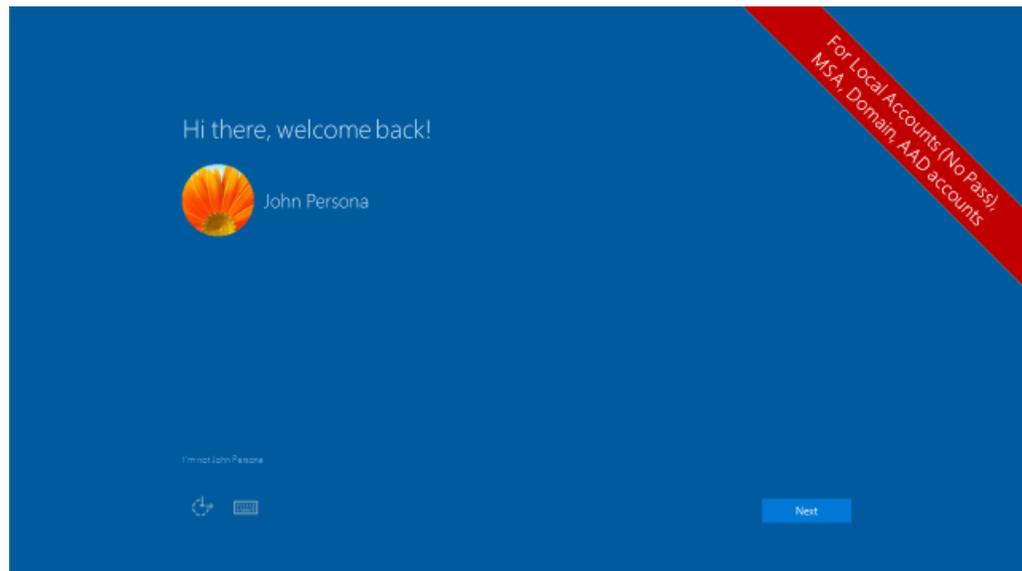
1. Restart occurs and system starts first boot experience.



2. Sign-in screen displays, depending on type of account.
  - a. Local accounts with password.

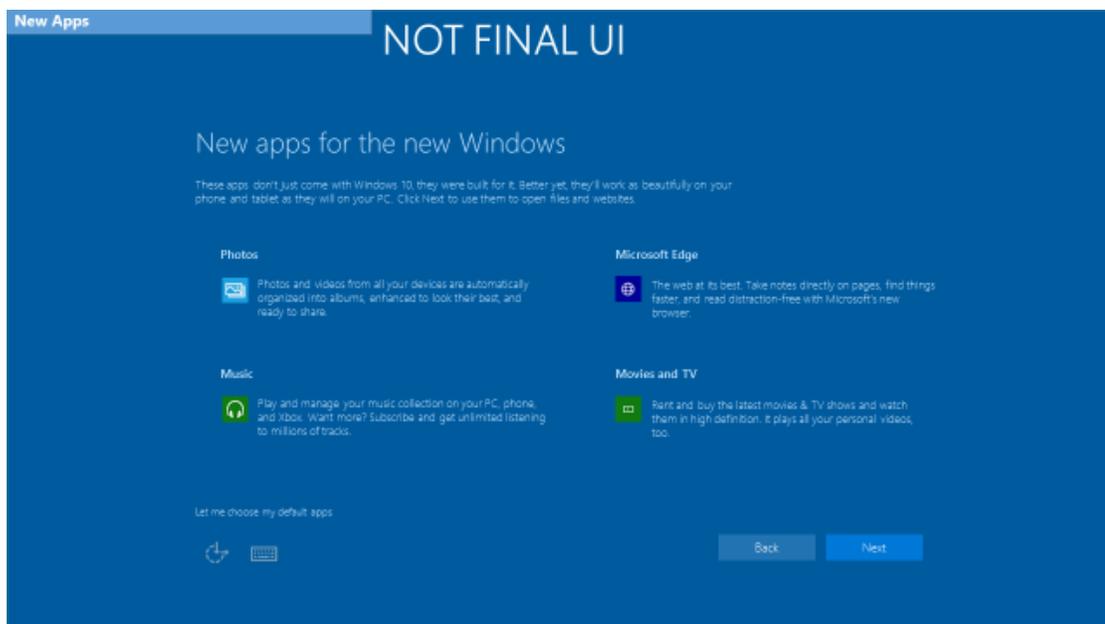
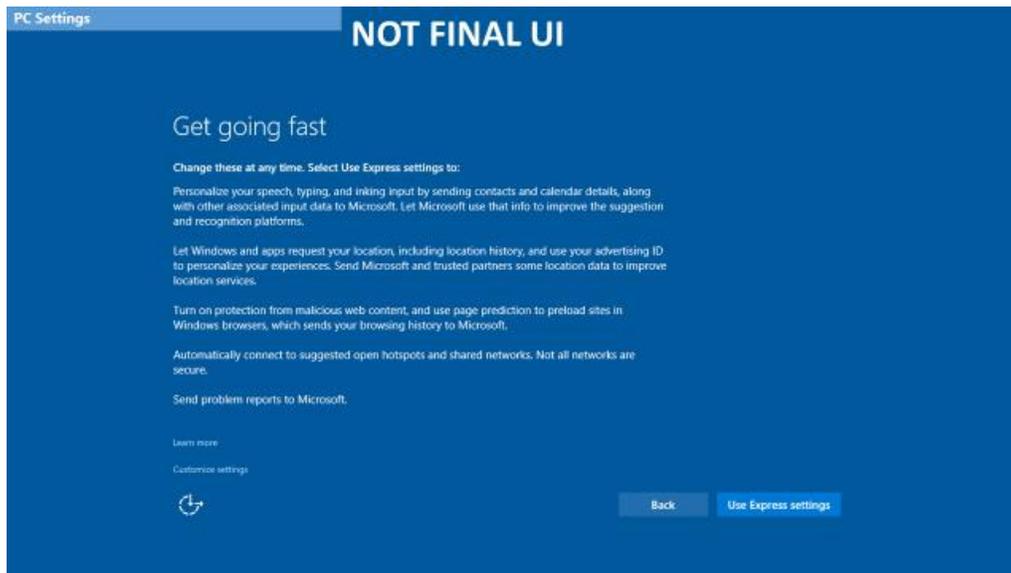


- b. Local accounts no password, MSA, Domain and Azure Active Directory (AAD) accounts.

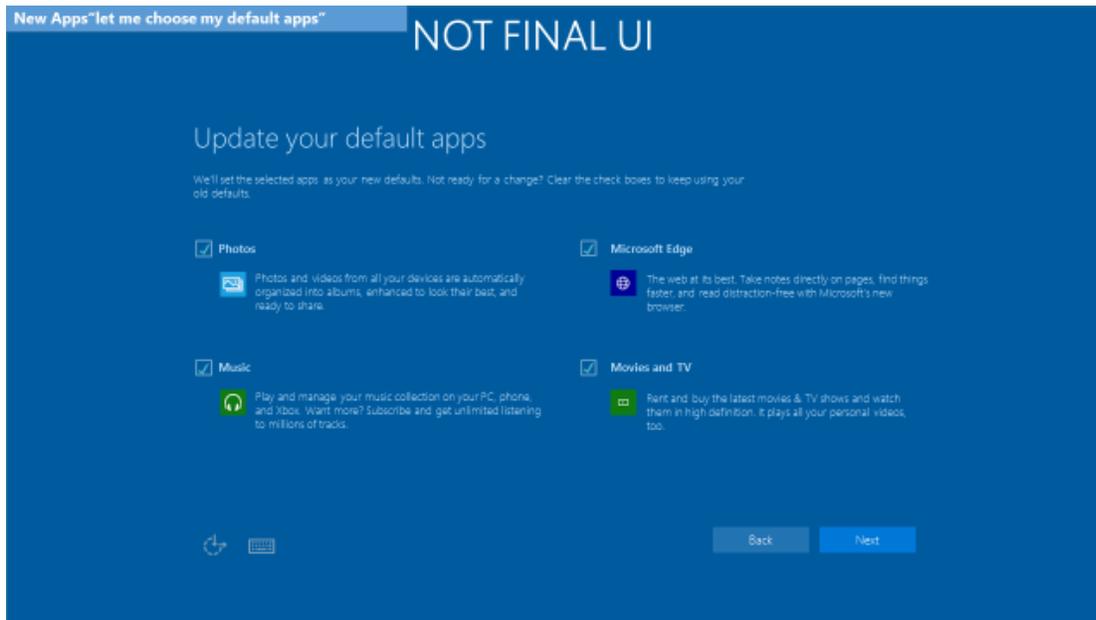


**Note:** AAD available on Pro and Enterprise SKU's only.

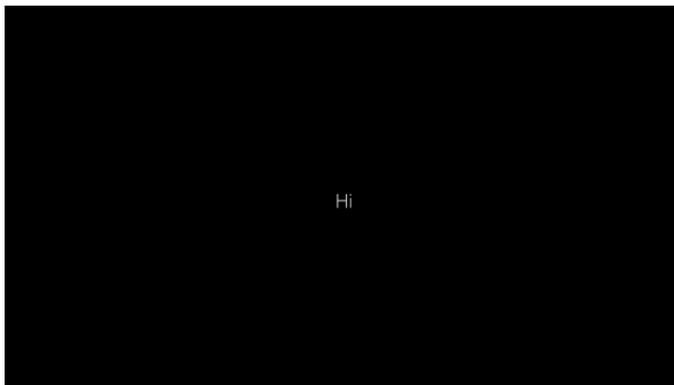
3. Click **Use Express settings** to continue, or click the **Custom settings** link to customize.



## Custom settings (page one)

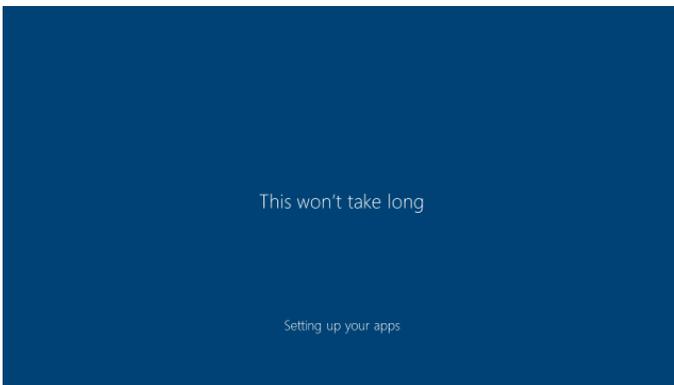


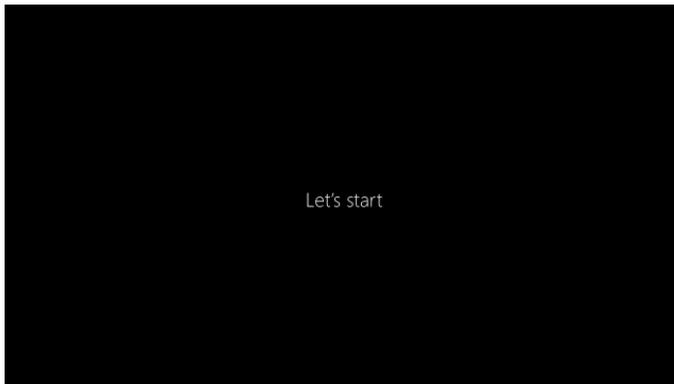
4. Click **Next** to use the Windows 10 default apps or choose which apps will be your file and link defaults link to change these. (UI not finalized – screenshot will be in final training package)
5. Logon to Windows.
6. Setup continues.





If customer entered their password incorrectly previously, a screen will show prior to the color screen below asking them to re-enter it.





7. Process is complete.
  - Local accounts no password, Microsoft Account, Domain and Azure Active Directory (AAD) accounts: will see the logon screen to enter credentials.
  - Local accounts that already provided password: will see the Desktop.

### Windows Update: Classic Hub Entry Point with Compatibility Issues

This section shows an upgrade from an existing, copy of Windows 7 SP1 or Windows 8.1 Update, with activation and compatibility issues, to Windows 10.

#### Step 1: Pre-Release KB Install

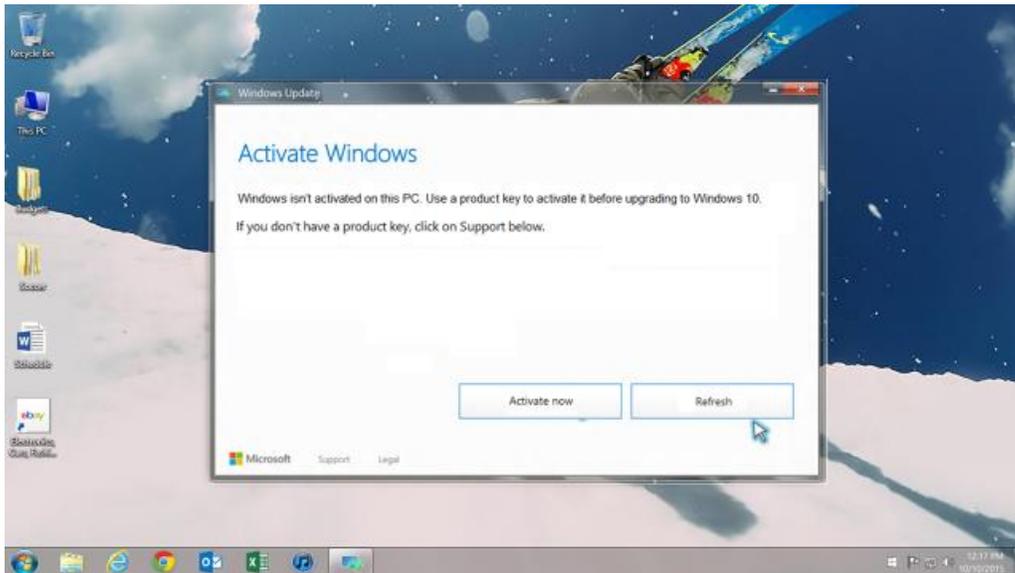
Follow steps shown in the [Windows Update: Classic Hub Entry Point without Compatibility Issues](#) section.

#### Step 2: Get the Upgrade through Windows Update and Accept EULA

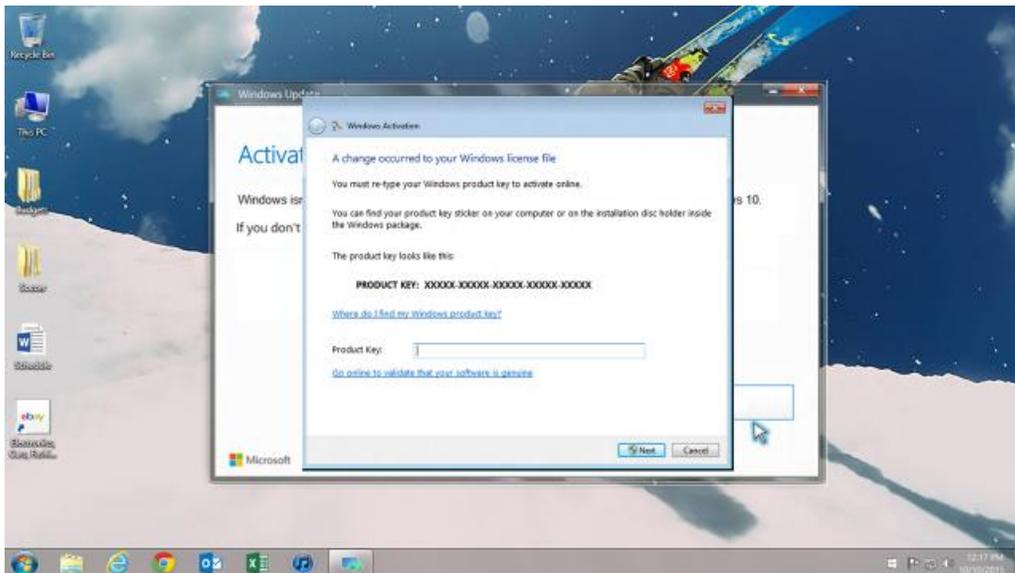
Follow steps shown in the [Windows Update: Classic Hub Entry Point without Compatibility Issues](#) section.

### Step 3: Resolve activation and/or compatibility issues

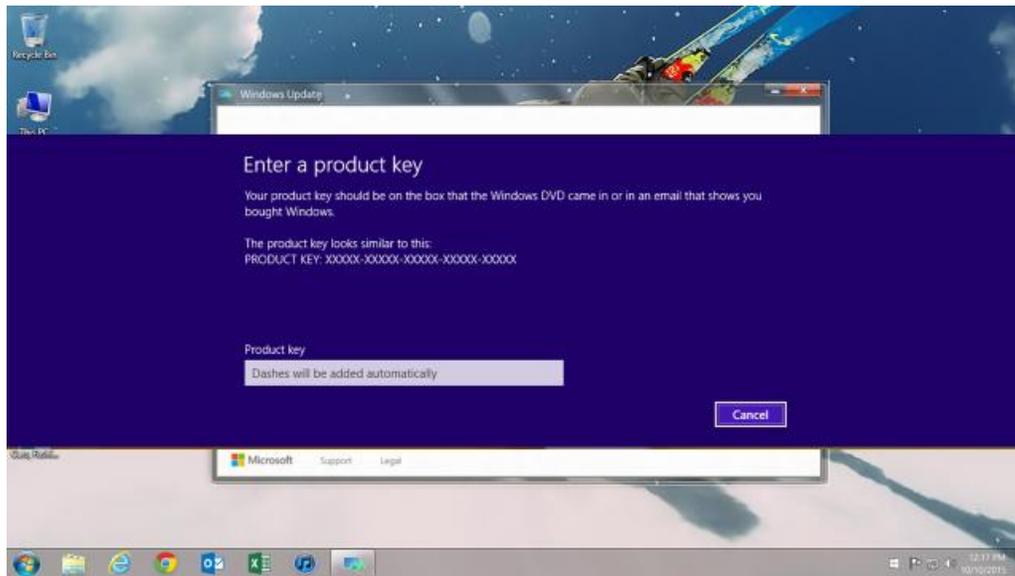
1. Customer can click **Support** link to get information about getting a product key.



2. Click **Activate now** to enter your product key.

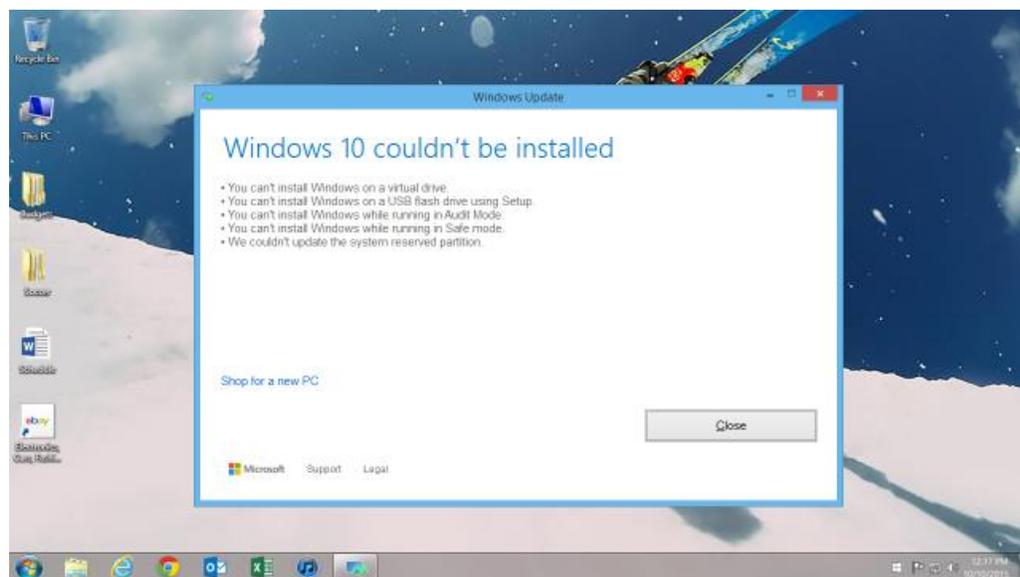


## Windows 7 SP1

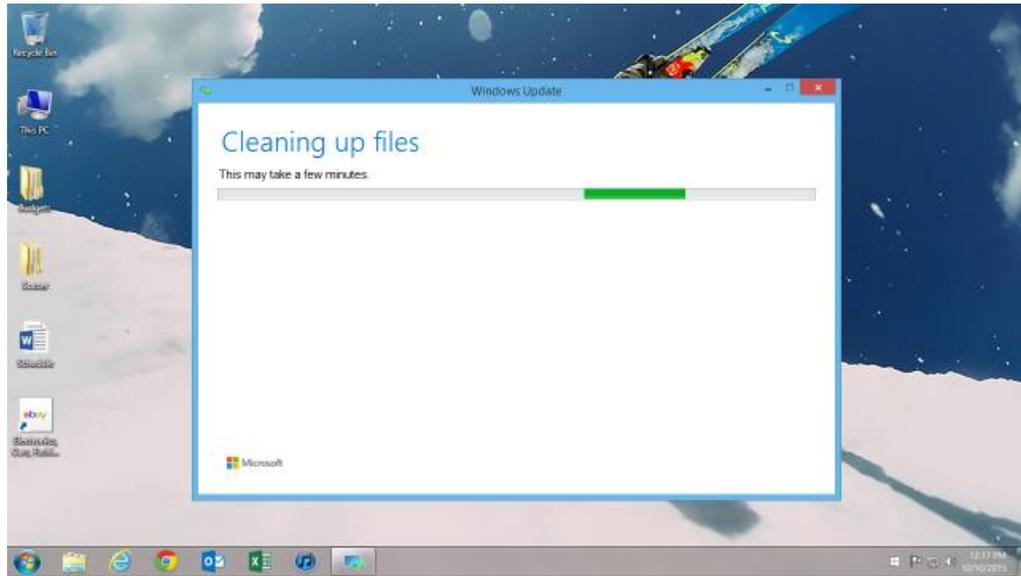


## Windows 8.1 Update

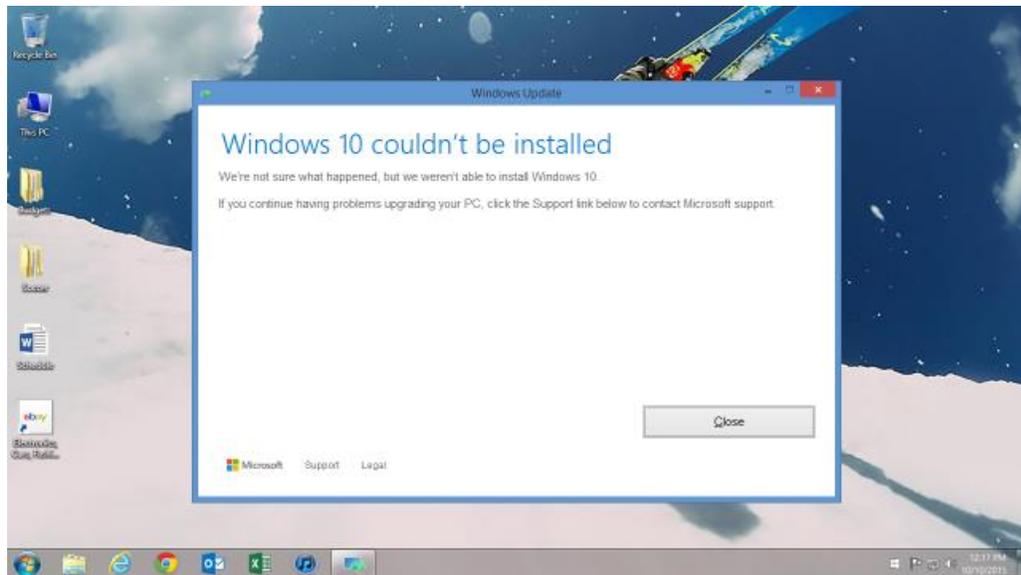
3. The pre-download compatibility check runs and presents issues. This check is looking for system requirements and disk space. See the bullets below for issues that may be encountered.
  - o **System requirements compatibility issue.** Click the link to **Shop for a new PC** or **Close** to exit.



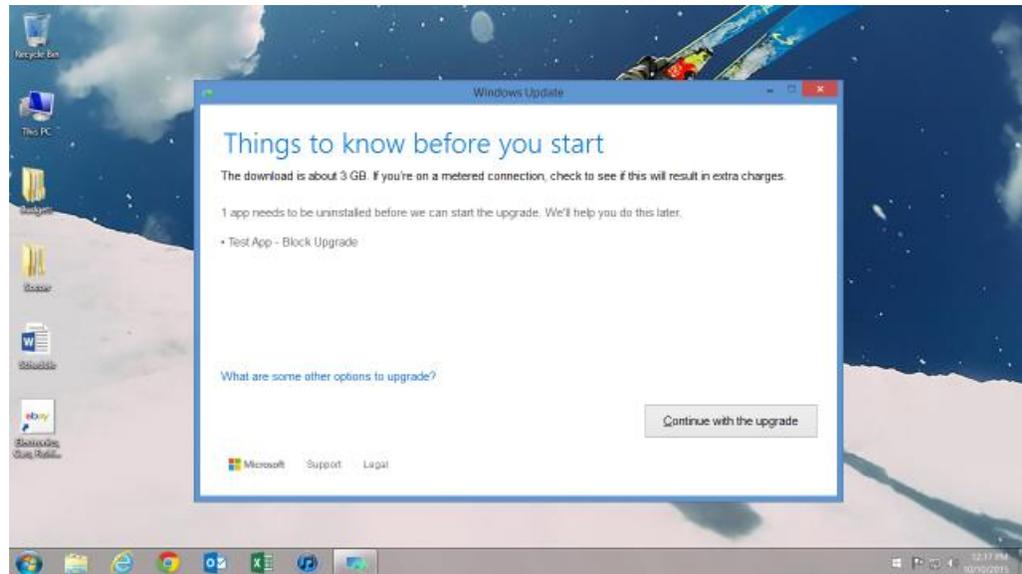
- Files are cleaned up. Upgrade stops.



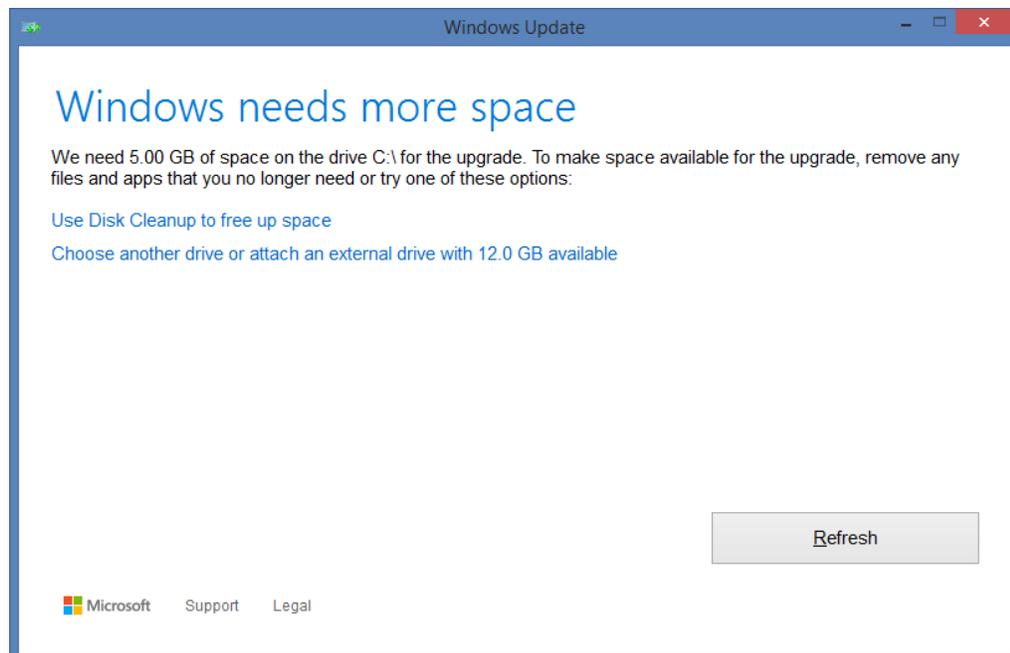
- Generic installation error/failure.

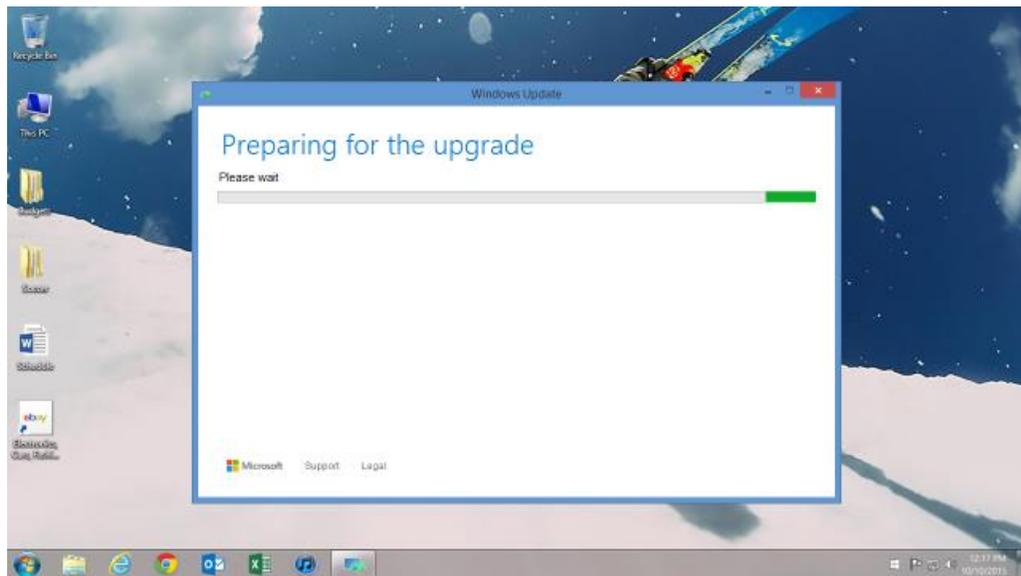
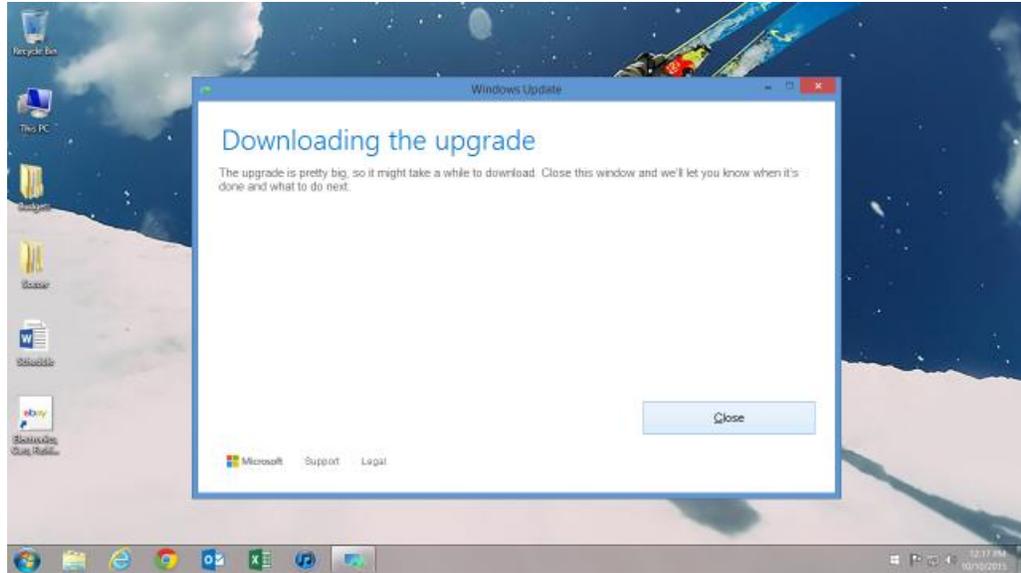


- **Metered Network:** If customer is on a metered network, the checks will run and present the issues together, as in the example below so that they are aware of the issues that will present when they continue with the upgrade.

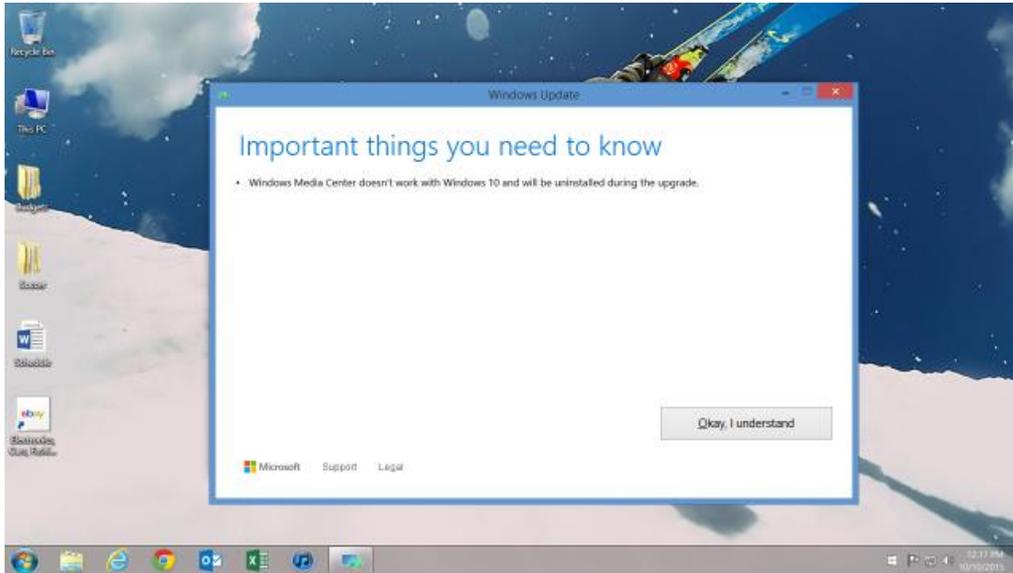


- **Disk space needed.** This is the download size check (dynamically set, standard size approximately 5 GB). If a drive is needed, we ask for 8GB in additional space as a safety measure.

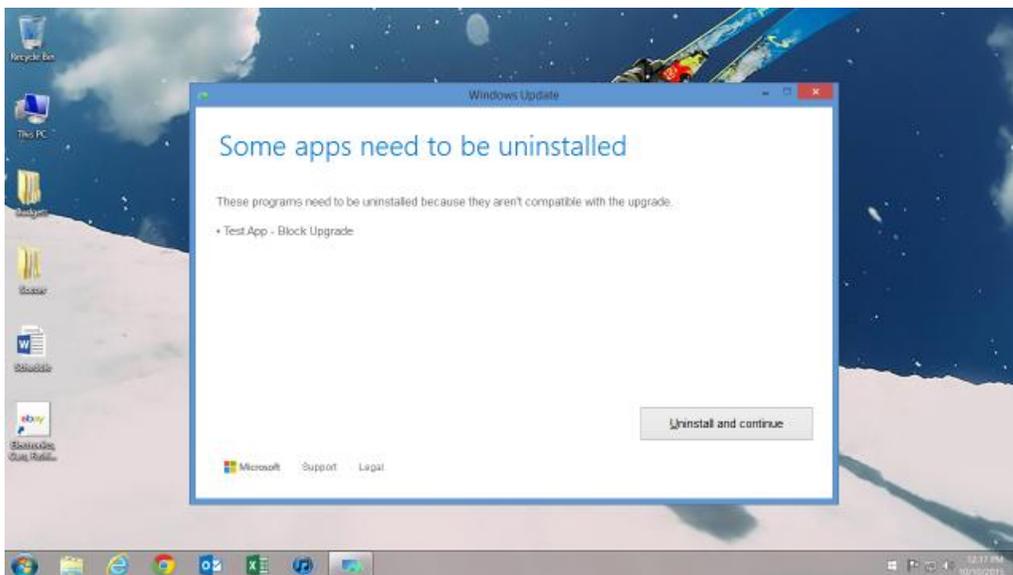


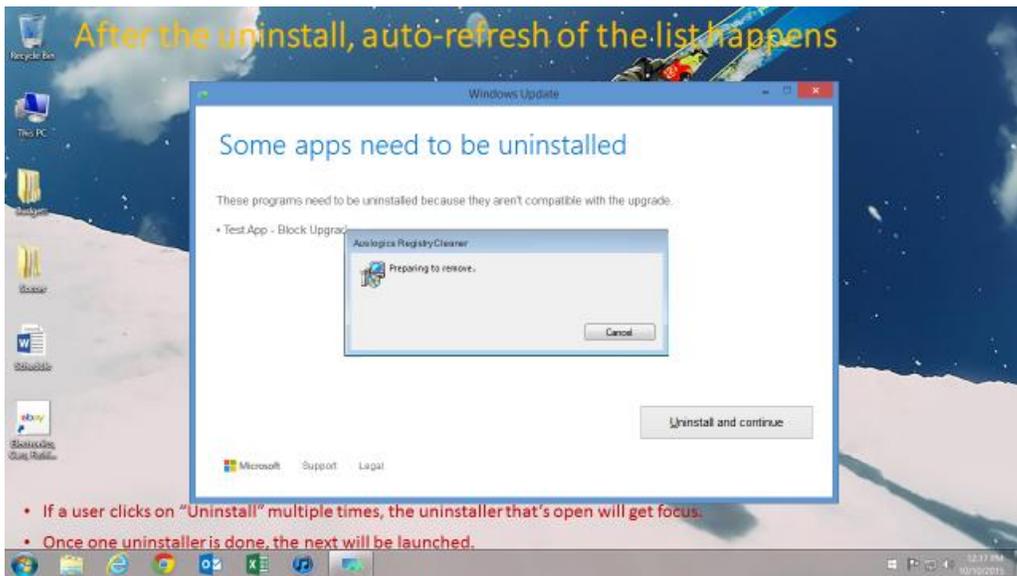
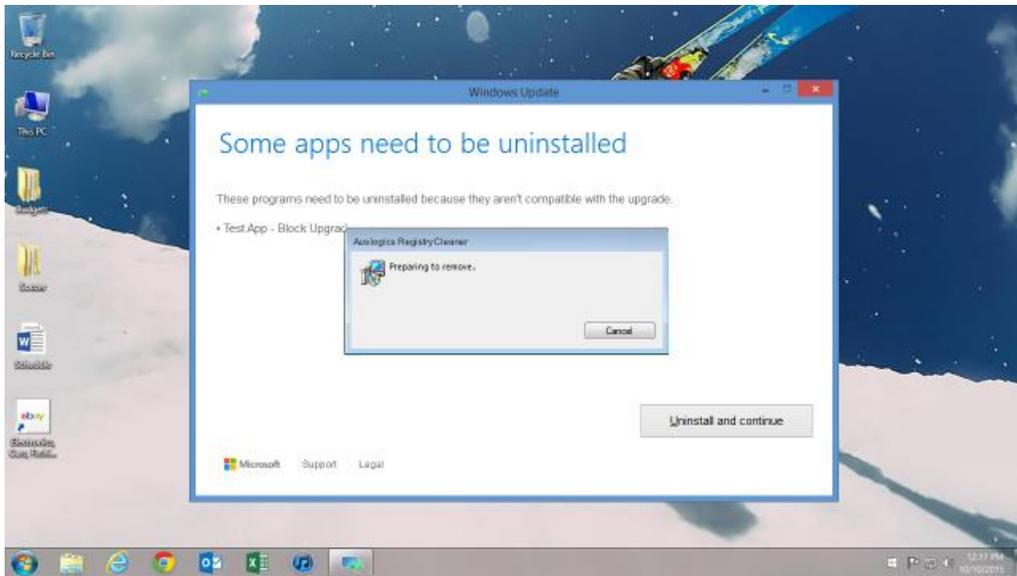


4. **Media Center doesn't work with Windows 10 if they have it installed and have used it at least once.** Windows 8.x Pro with Media Center Edition will always receive this warning. Another error may show if there's third party encryption software. It will detect that software if that software is present. This phase isn't checking if it's encrypted, only if the third party encryption software exists on the machine. Click **Okay, I understand**.

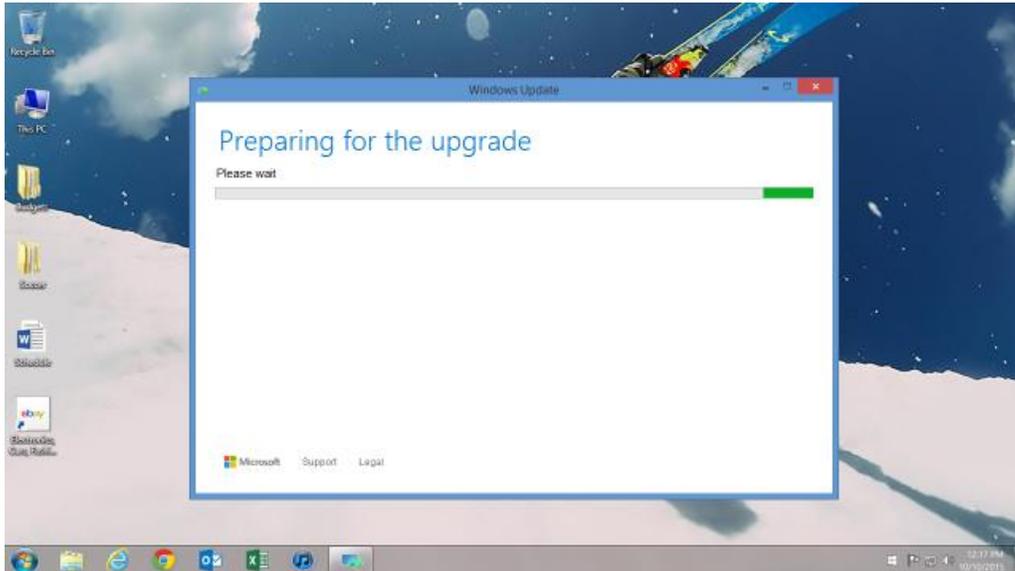


5. Full compatibility checks run. See Driver and Compatibility section for current list of checks. Click **Uninstall and continue** to uninstall the blocked apps.

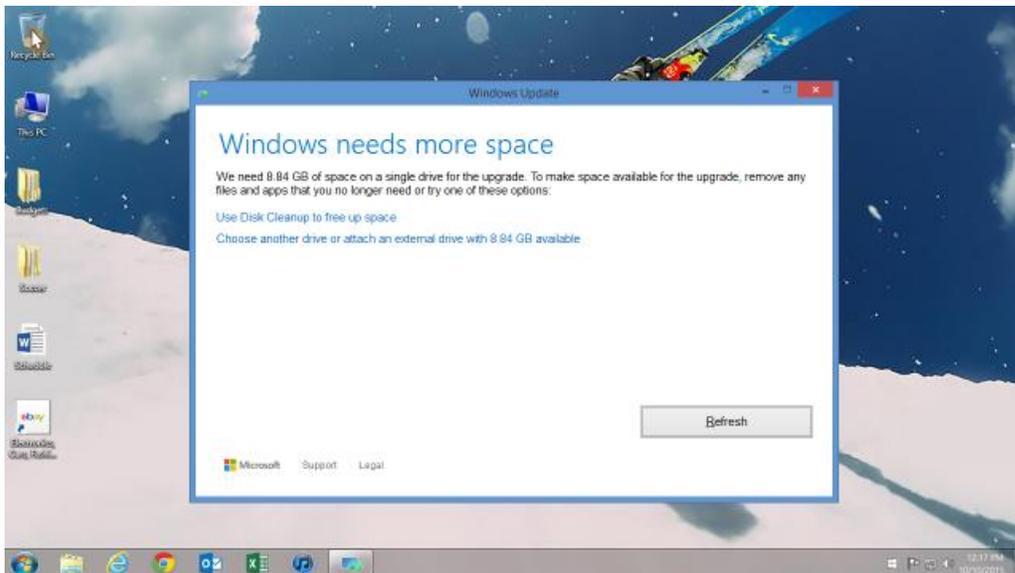




6. After the blocking issues are resolved, the upgrade continues.



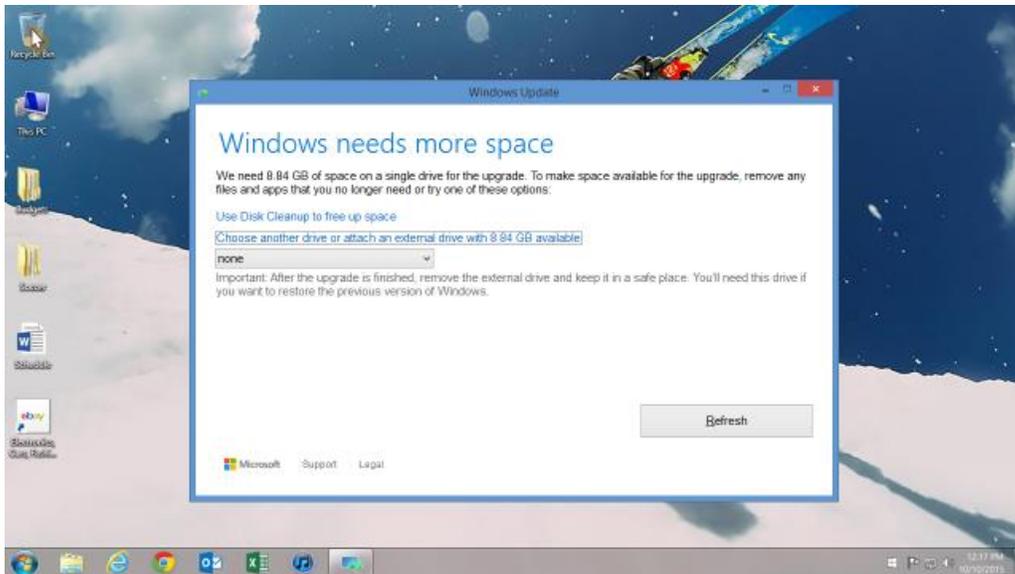
7. The size is then checked again.



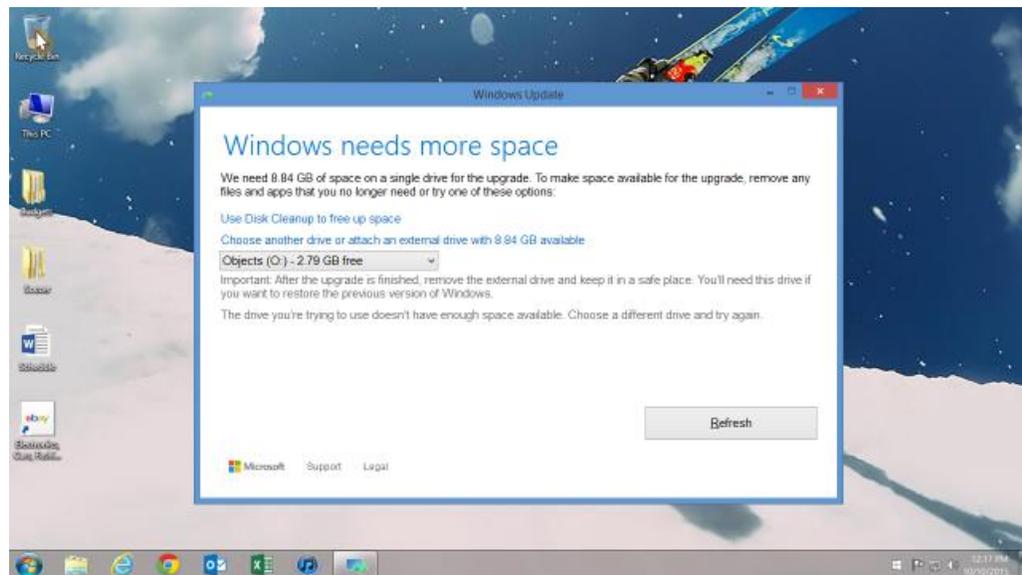
8. If more space is needed, an external formatted NTFS or Fat32 drive can be used. A minimum of 8 GB of free space is required on a single drive to proceed with the upgrade.



**Note:** If customer wants to use uninstall feature in first 31 days and ran into this during upgrade and uses an external drive for space, they will need that external drive to uninstall since windows.~tmp resides on it.



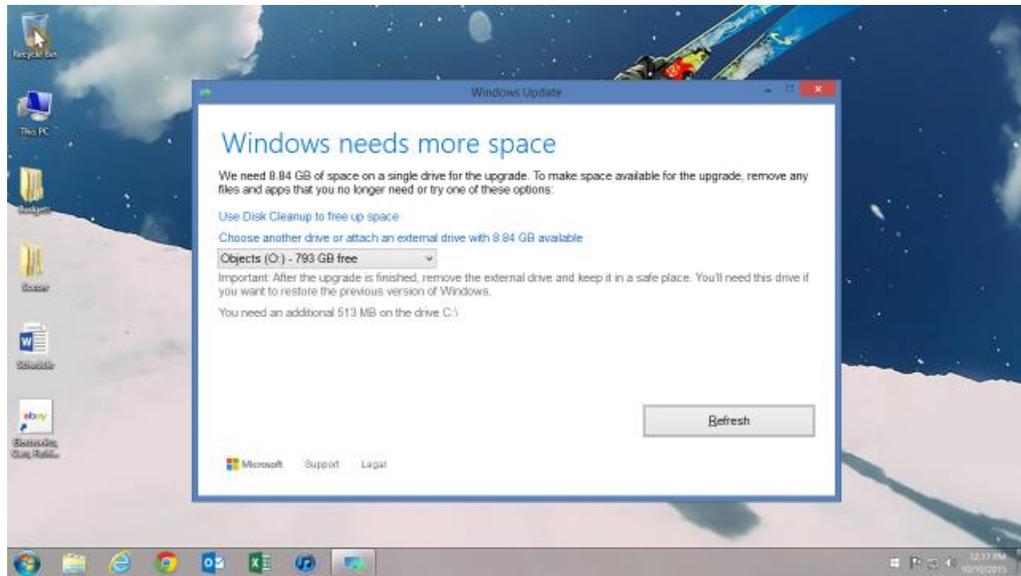
- a. External drive doesn't have enough space.



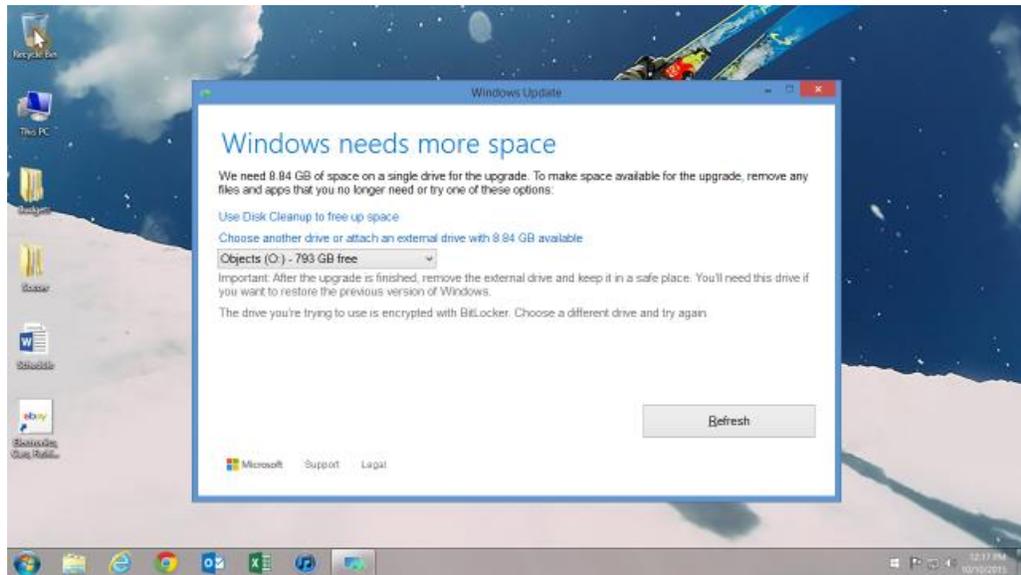
- b. More messaging – providing additional space required.



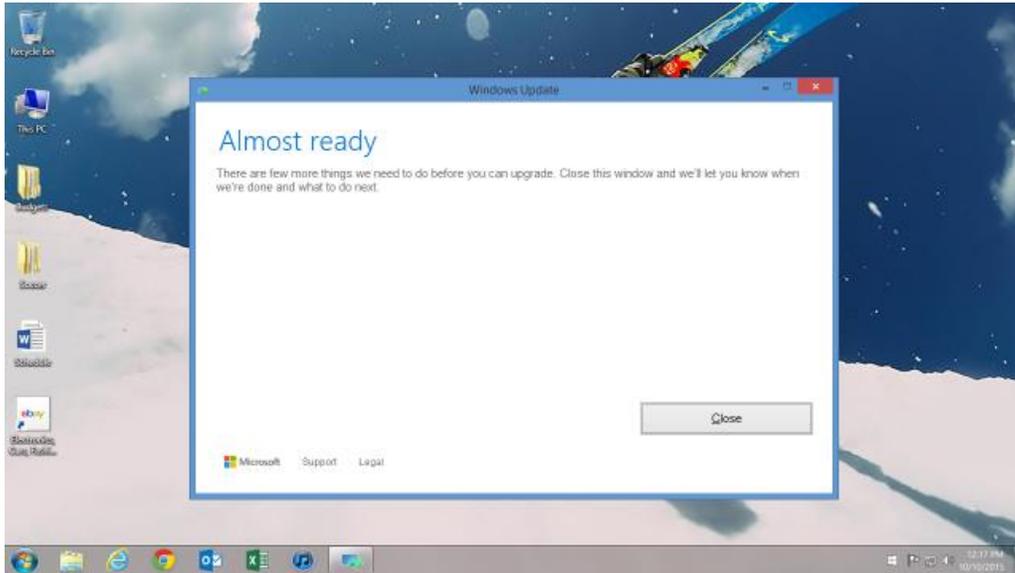
**Note:** You typically need 1 GB of space on the actual system drive, even when using external storage. This example below shows that customer still needs to free up 513MB on the actual system drive (C:) to proceed.



c. More messaging – if the drive selected is encrypted.



9. Once a drive is selected, messaging appears below.

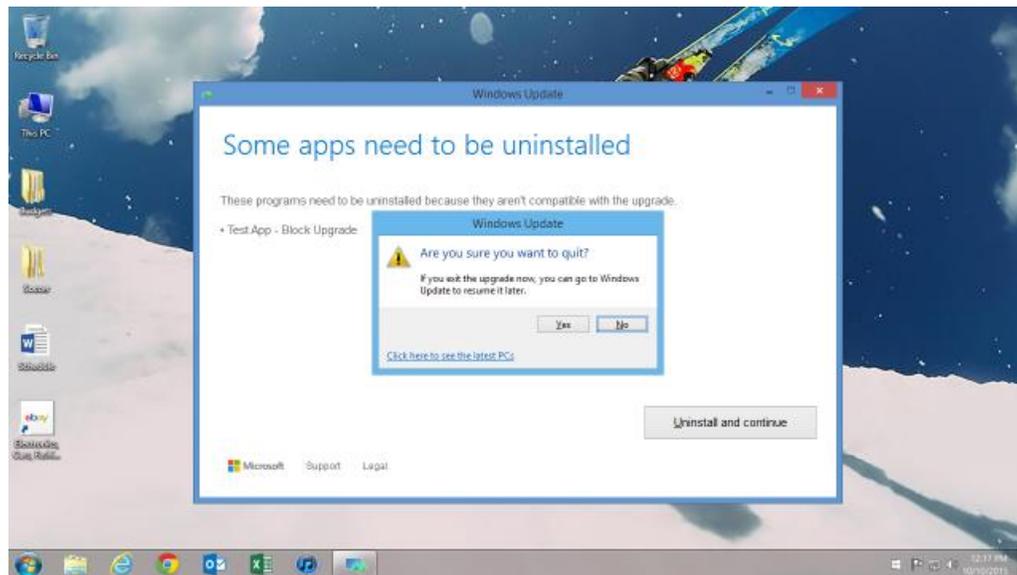


#### Compatibility remediation for OEMs.



In this scenario a customer has received a hard block or has quit the process. As they quit, they are shown this screen. When possible, the link will take users to the Microsoft Store Online to the same brand of a device they are trying to upgrade. This link is contextual.

**Note:** The [Click here to see the latest PC's](#) link is not final.



#### Step 4: Start or Schedule the Upgrade

Follow steps shown in the [Windows Update: Classic Hub Entry Point without Compatibility Issues](#) section.

### Step 5: Install the Upgrade

Follow steps shown in the **Windows Update: Classic Hub Entry Point without Compatibility Issues** section.

### Step 6: Completing Setup

Follow steps shown in the **Windows Update: Classic Hub Entry Point without Compatibility Issues** section.

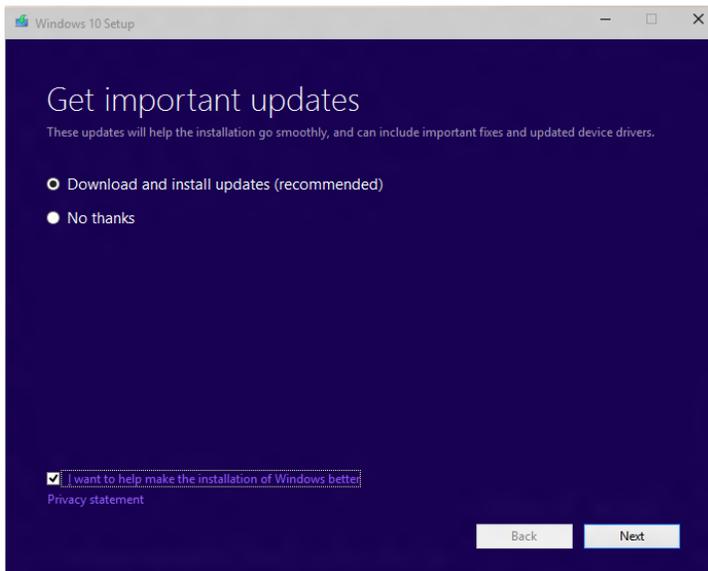
## Install from ISO or USB Media without Compatibility Issues

This section shows the installation path using an ISO image to Windows 10.

1. Install from ISO begins.

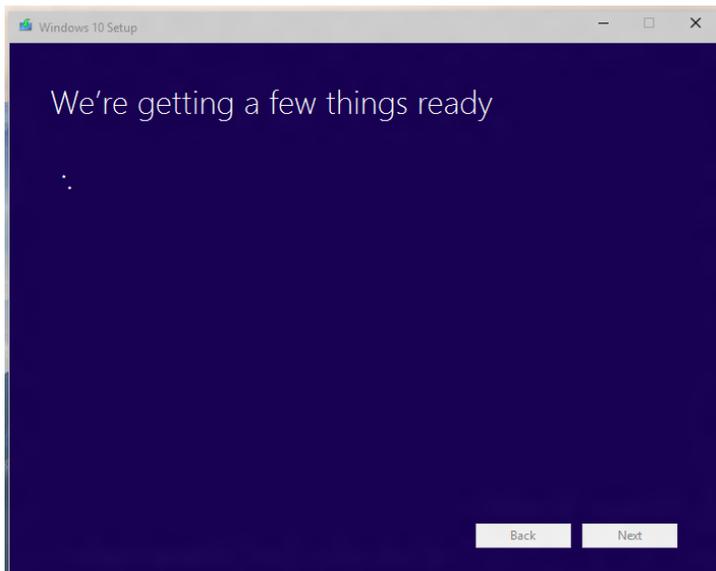
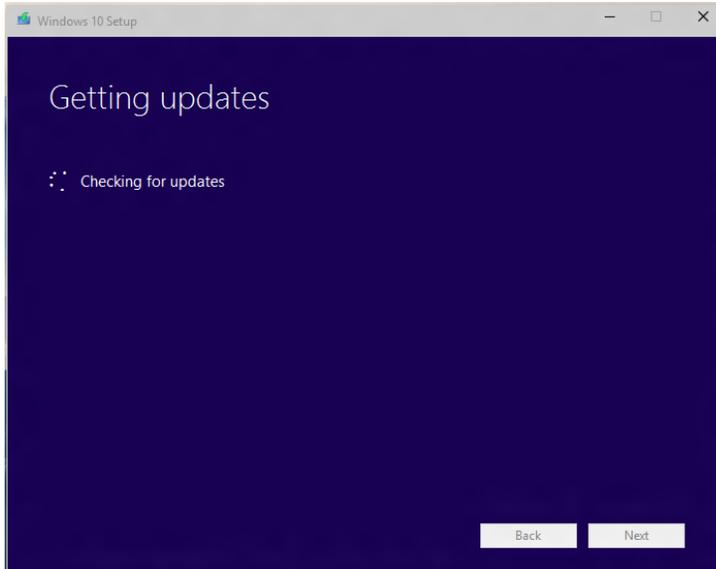


2. Select **Download and install updates** or **No thanks**. Click **Next** to continue.

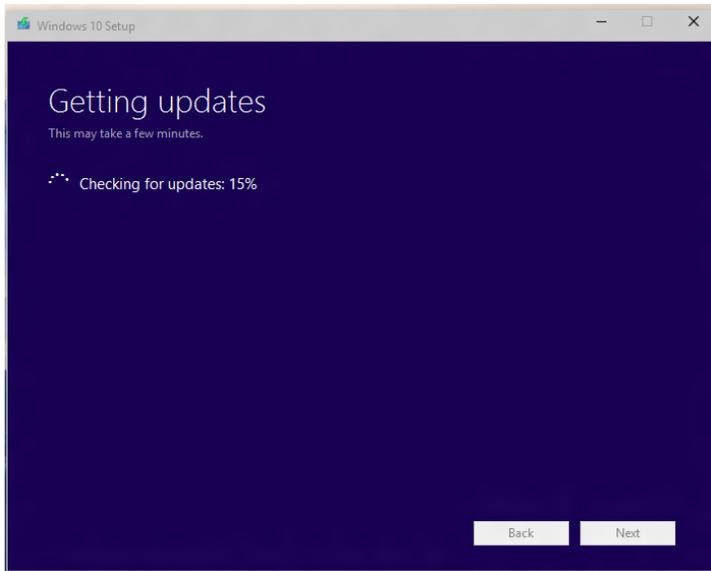
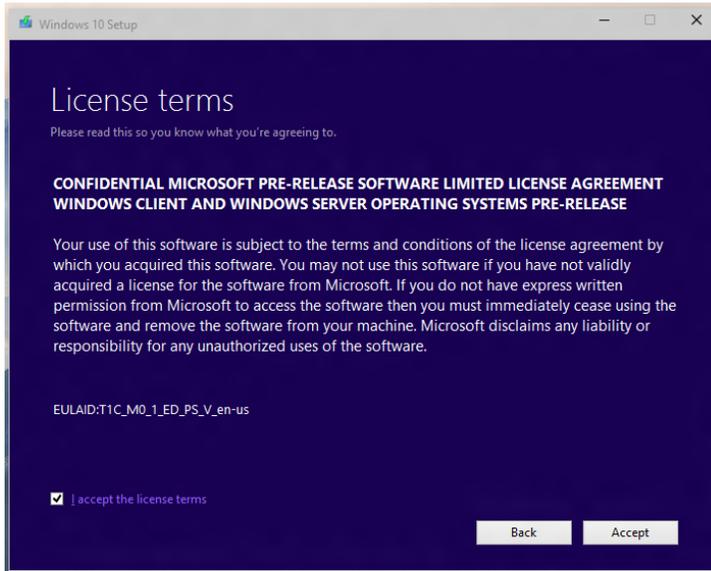


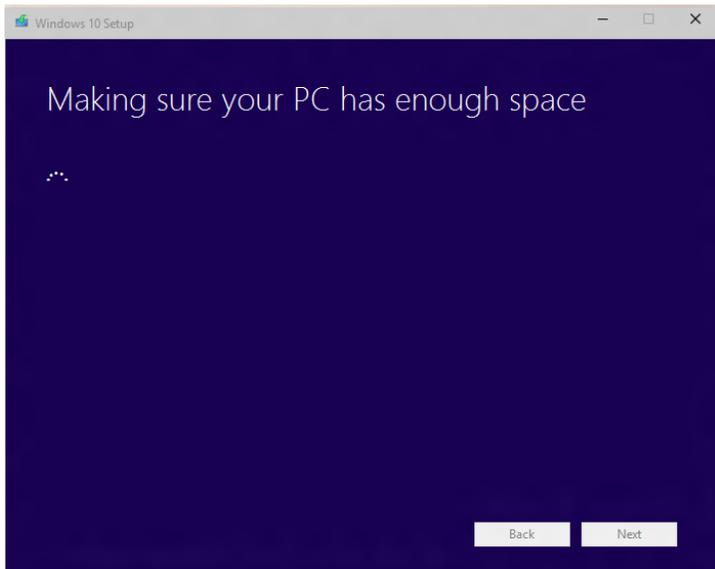
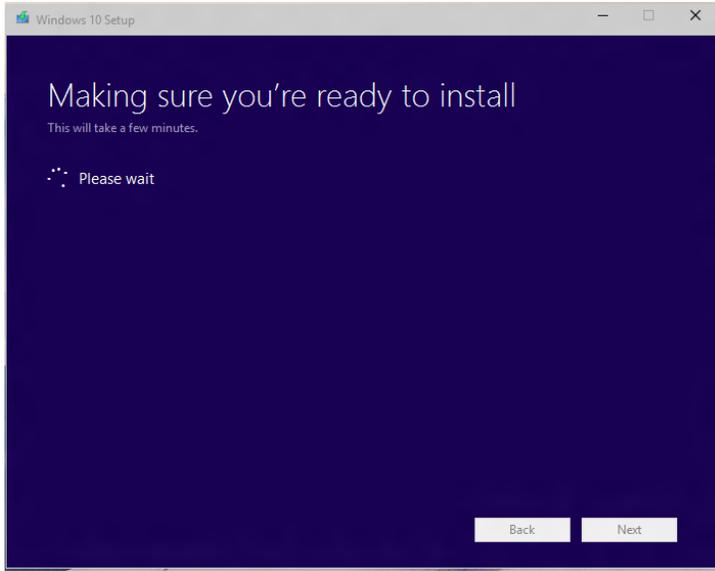
3. If **Download and install updates** was selected, check for updates occurs. Click **Next** to continue.

(Note: Customers should always select the download option to receive the latest drivers and additional language packs during the setup process.)

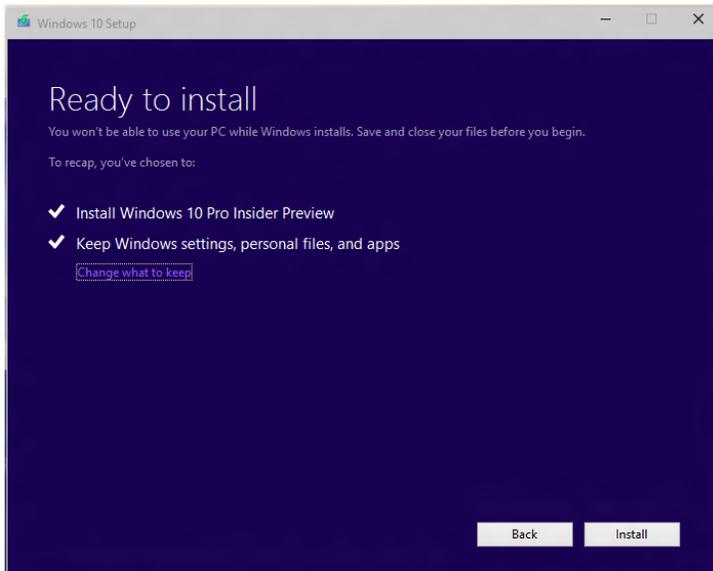


4. Click **Accept** to accept the license. (UI not final)

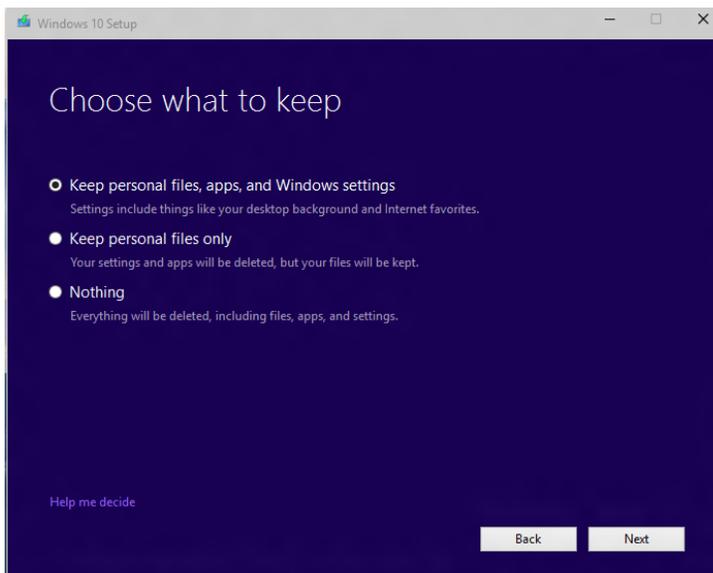




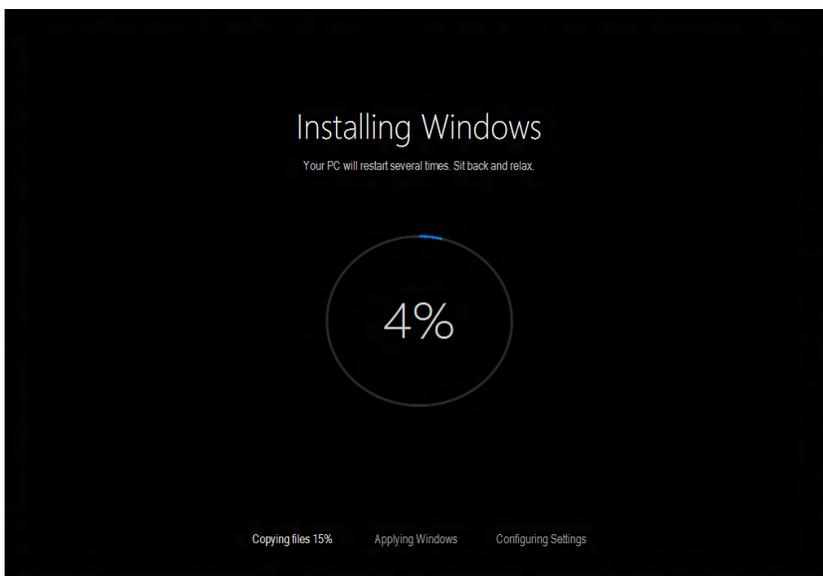
5. Click **Install** to continue.



6. If you click "Change what to keep" then you can select an option to choose what to keep and click **Next**.



## 7. Windows installs. (UI not final)



### Install from ISO or USB Media with Compatibility Issues

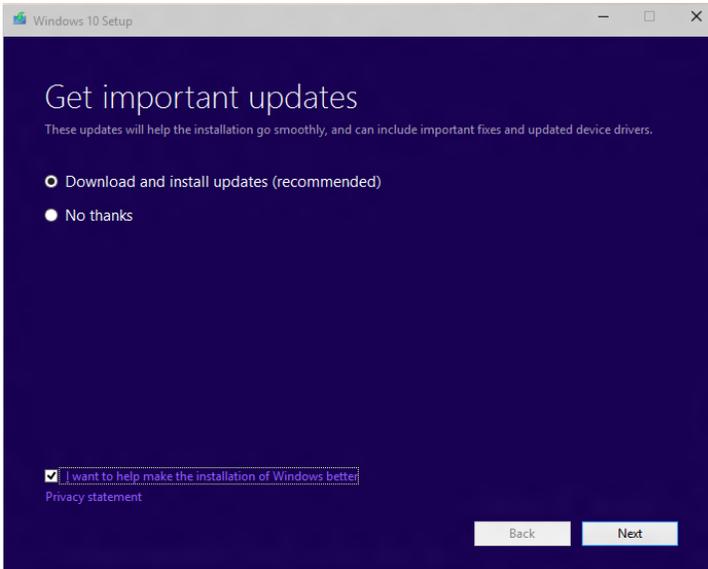
This section shows the installation path using an ISO image to Windows 10. It also shows screenshots for presented compatibility issues, when customer must clean install instead of upgrade, and when the upgrade cannot be completed and customer rolls back to previous OS.

#### 1. Install from ISO begins.

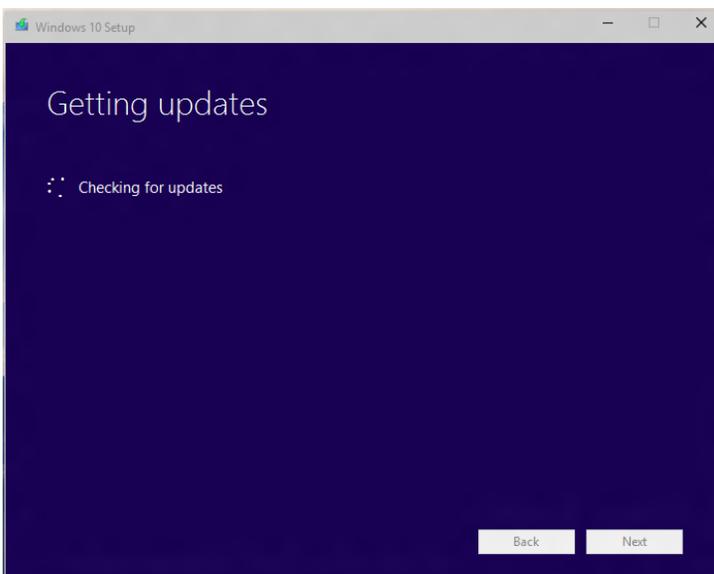


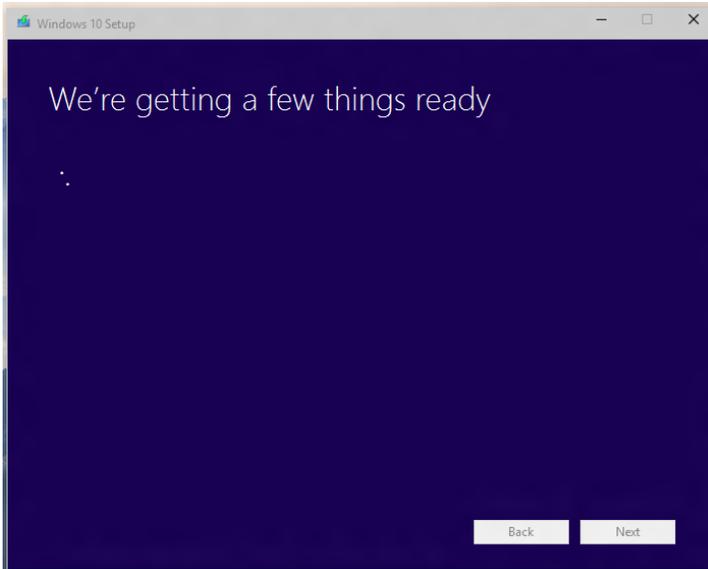


2. Select **Download and install updates** or **No thanks**. Click **Next** to continue.

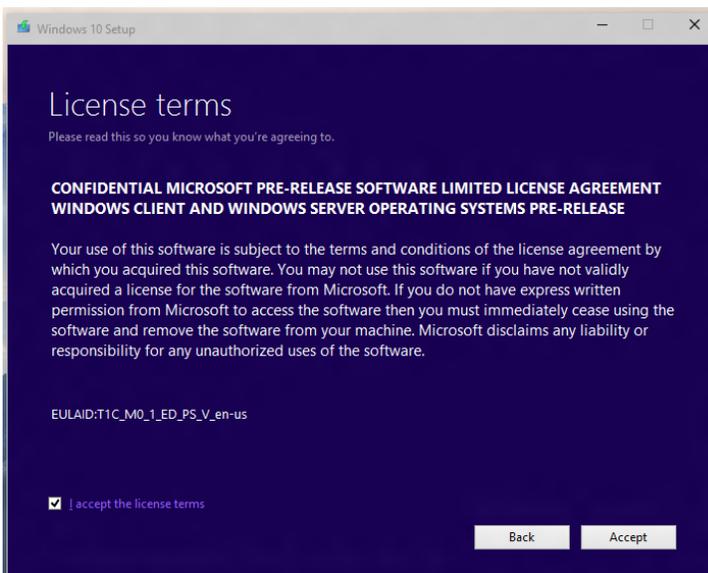


3. If **Download and install updates** was selected, check for updates occurs. Click **Next** to continue.

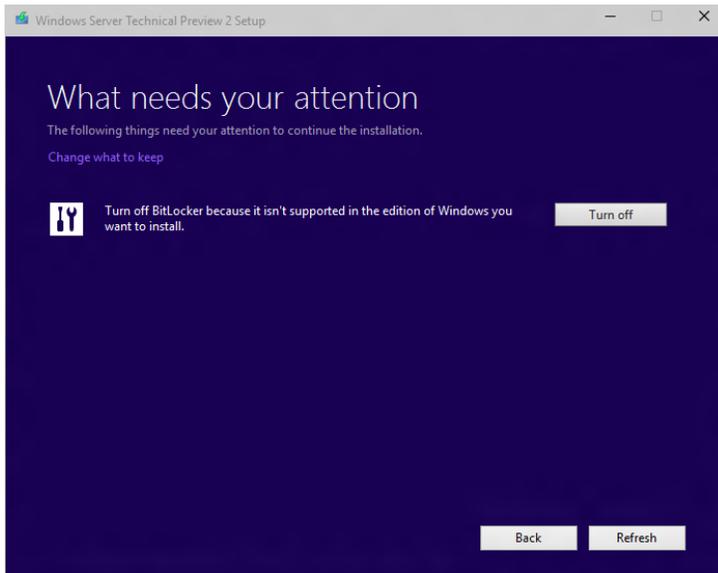




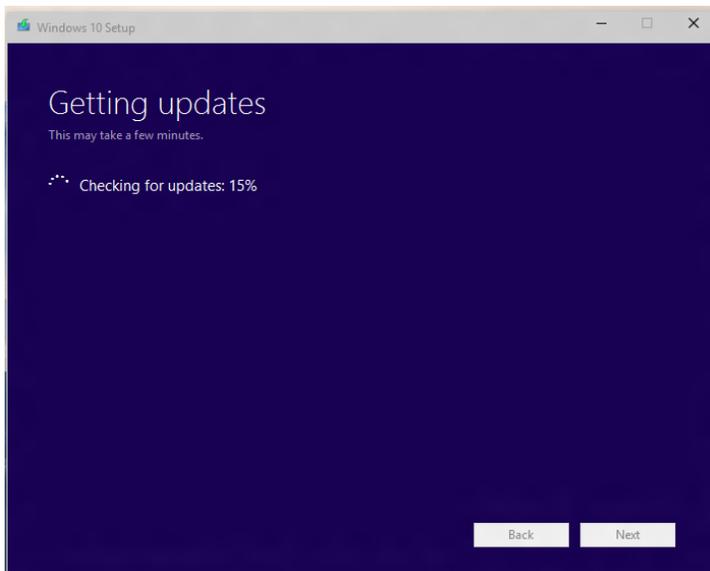
4. Click **Accept** to accept the license. (UI not final)

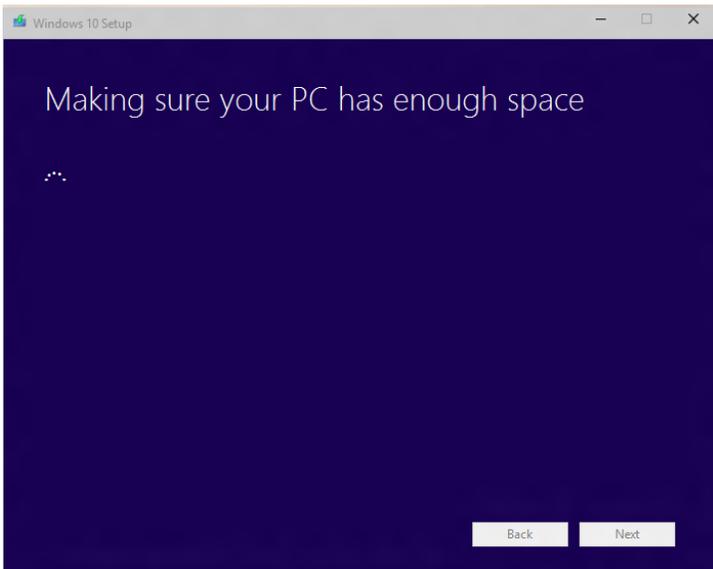
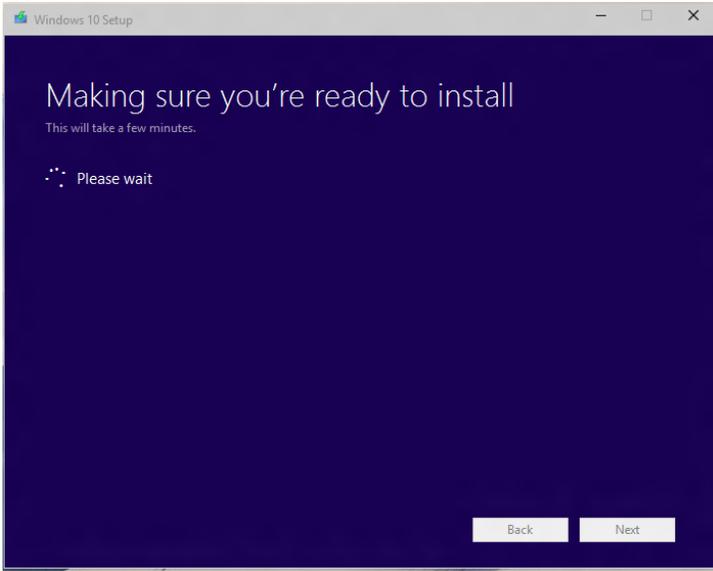


5. Review and resolve compatibility issues.

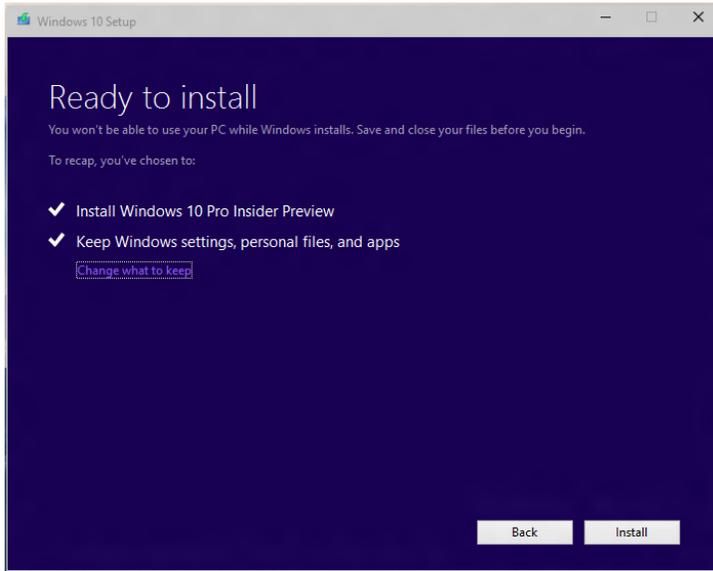


6. Getting updates. Click **Next** to continue.

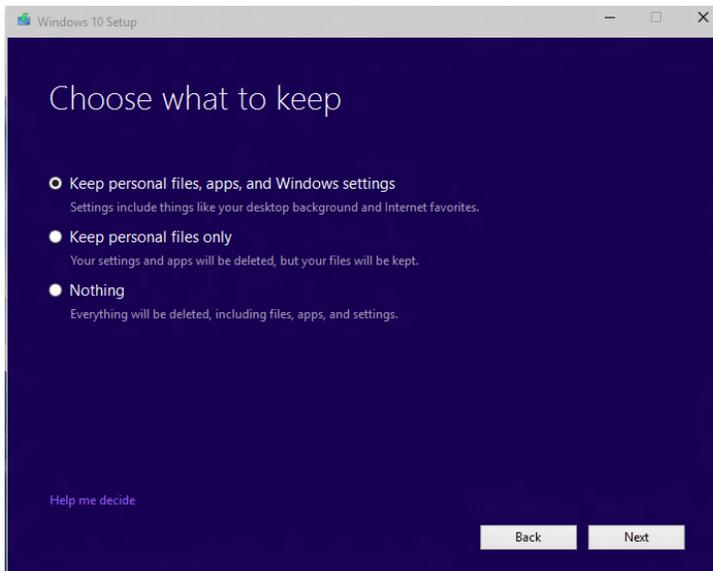




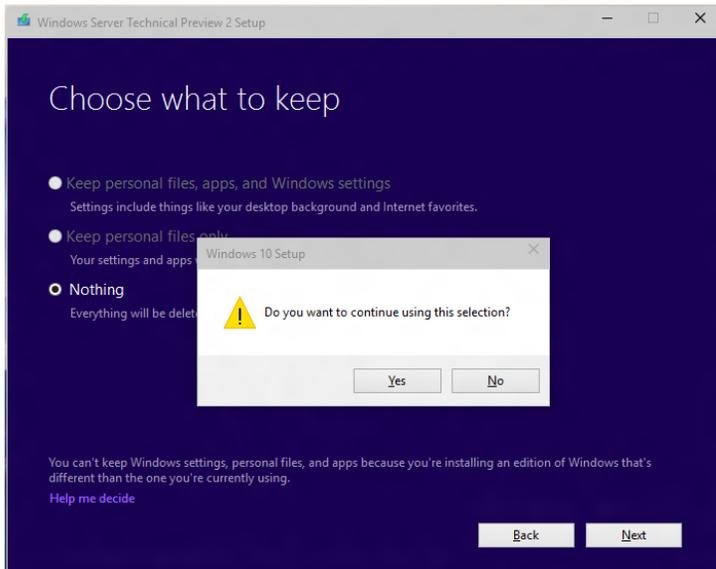
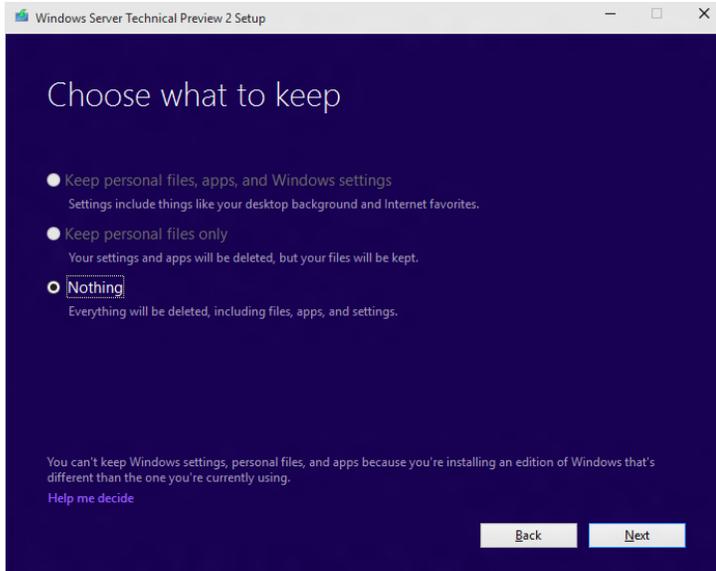
7. Click **Install**.



8. If you click "Change what to keep" then select an option to choose what to keep and click **Next**.



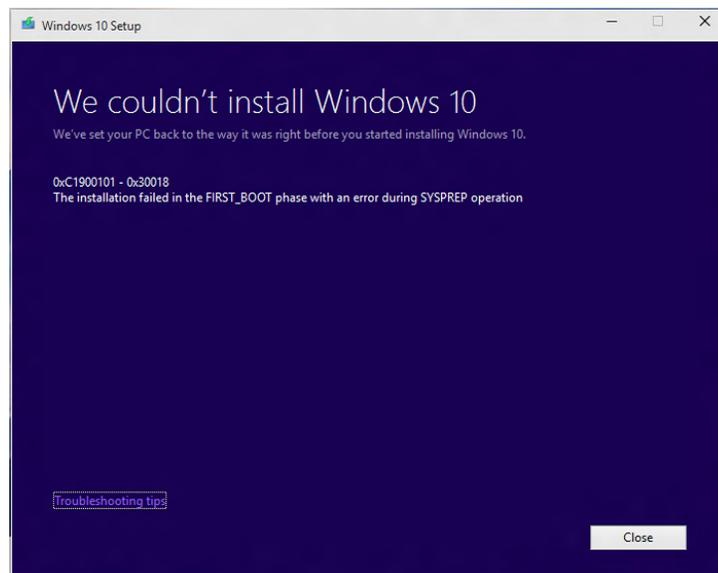
- a. Potential non-upgrade scenarios requiring clean install.
  - i. Down-level OS: In this case, a customer may have Core installed and be trying to upgrade using Pro media.
  - ii. Base language media is different from the installed language.



9. Windows starts installation.



- If unable to install, the following error appears and upgrade stops.

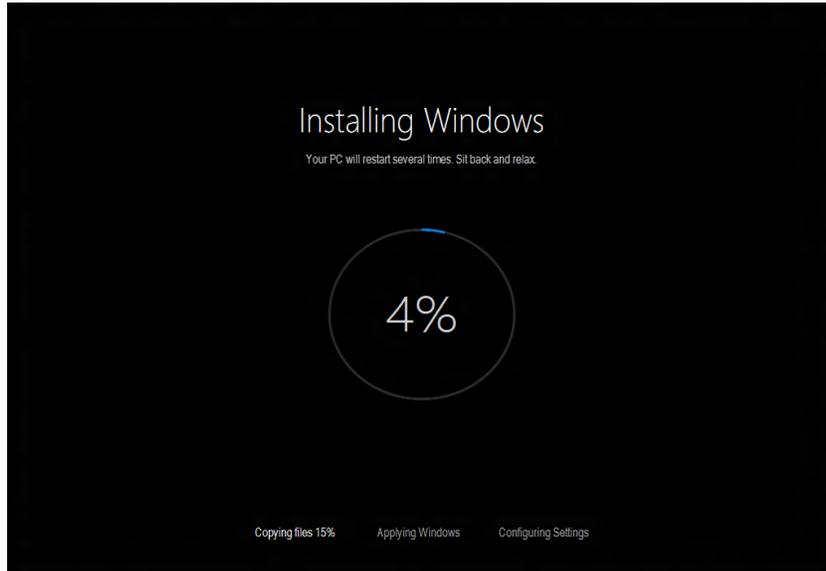


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**Note:** Second line provides further information about second error code. Also, note **Troubleshooting tips** link bottom of screen that takes customer to online content specific to troubleshooting upgrade rollbacks.

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- If there is no error, installation continues. (UI not final)



# Windows Activation

## Upgrade from an activated Windows 7 SP1 or 8.1 Update

When user upgrades to Windows 10 from Windows 7 SP1 or 8.1 Update, they should ensure their Windows 7 or 8.1 device is activated before upgrading to ensure they are upgraded as Genuine/Activated.

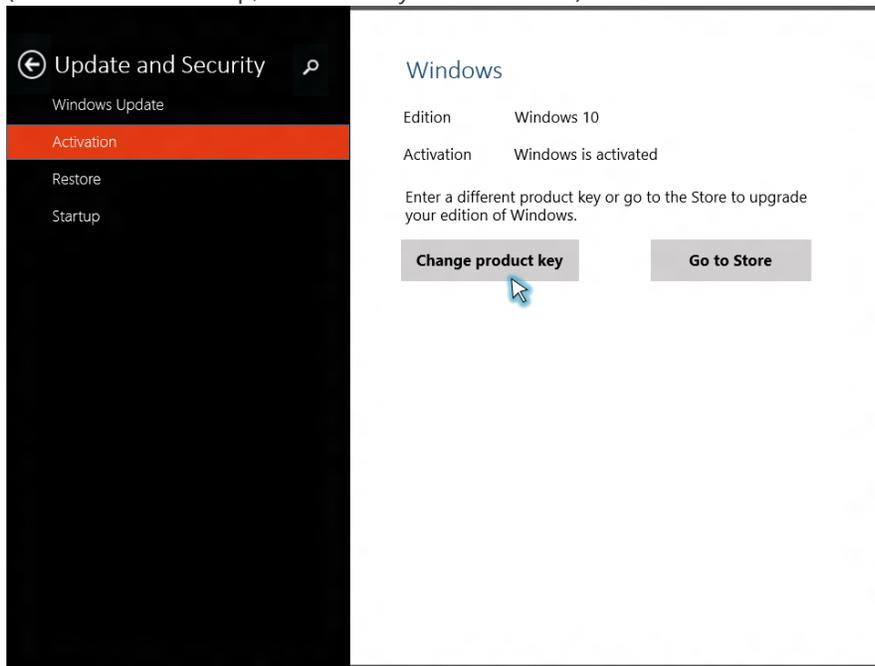
Note: Windows Policy and Business Decisions are the most fluid aspect of any OS launch and capturing these in an early guide would imply certainty when it might not exist yet. Instead, we want to focus in this guide on how the software is expected to work and what users expect to encounter in the way of experiences. When you launch Setup of Windows 10 from within an existing copy of Windows, setup requires that the down-level OS be activated. Setup does not do a "Genuine" check; meaning if the machine is activated the setup program will not do any further investigation of tampering with the activation mechanism of the underlying OS. When Windows 10 upgrades from an activated Windows 7 or Windows 8.1 device, Windows 10 will also activate and register a digital license of Windows 10 against the HardwareID of the device with the OneStore licensing service. The user can then re-install Windows 10 at a later point and as long as the underlying HardwareID has not changed significantly, Windows 10 will retrieve the existing digital license and use that to activate.

Major HardwareID changes that may change the identity of the device include changes to the CPU, TPM if present and the Motherboard and fixed components. Changes to hard drives, network cards and video cards should not change the HardwareID is a significant way in regards to OneStore digital OS licensing.

If a customer is activated/genuine, Windows 10 will automatically be activated within the background when the device is connected to Internet. They will see this message when they go to **Activation** page on Windows 10.

Users who boot from media to install Windows 10 will not be able to take advantage of the Free Upgrade promotion as Windows setup cannot check that the previous operating system is activated. Therefore, it is suggested to follow this method only with a valid Windows 10 Product Key or have previously upgraded to Windows 10.

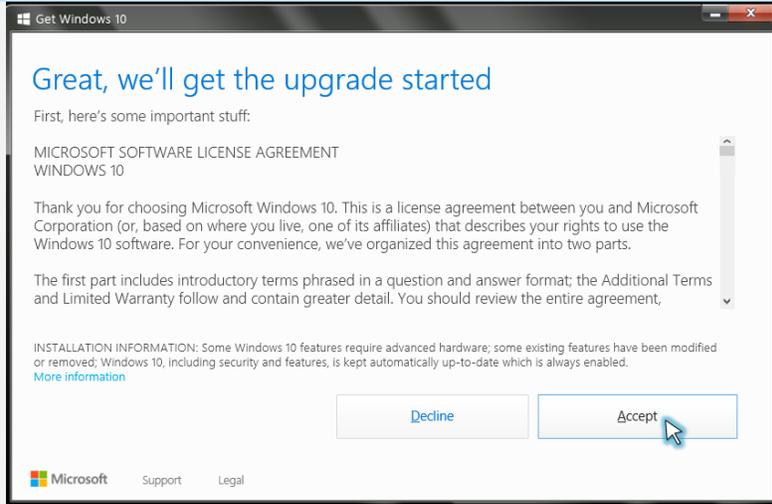
(This is a UI Mock-Up, Final UI may look different)



# Non-genuine copies of Windows

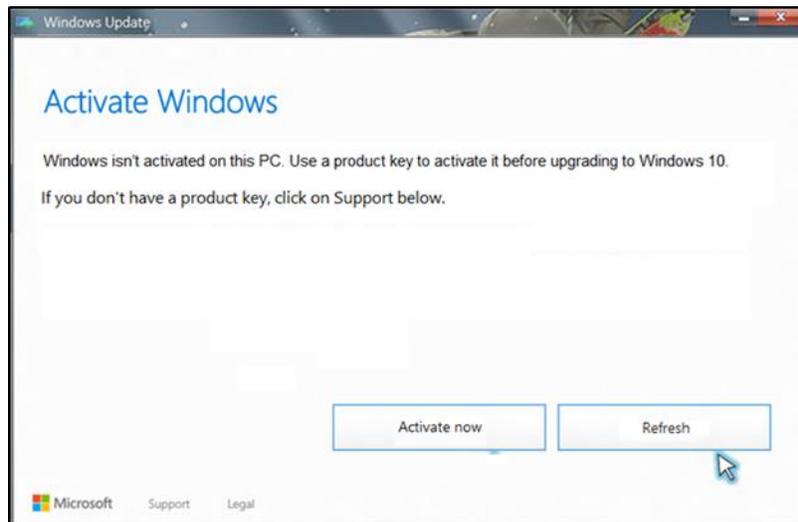
Windows Activation will be done during the upgrade from Windows 7 SP1/Windows 8.1 Update to Windows 10. Users must have a valid Windows license and be activated before upgrading to Windows 10.

### Screenshot



### Notes

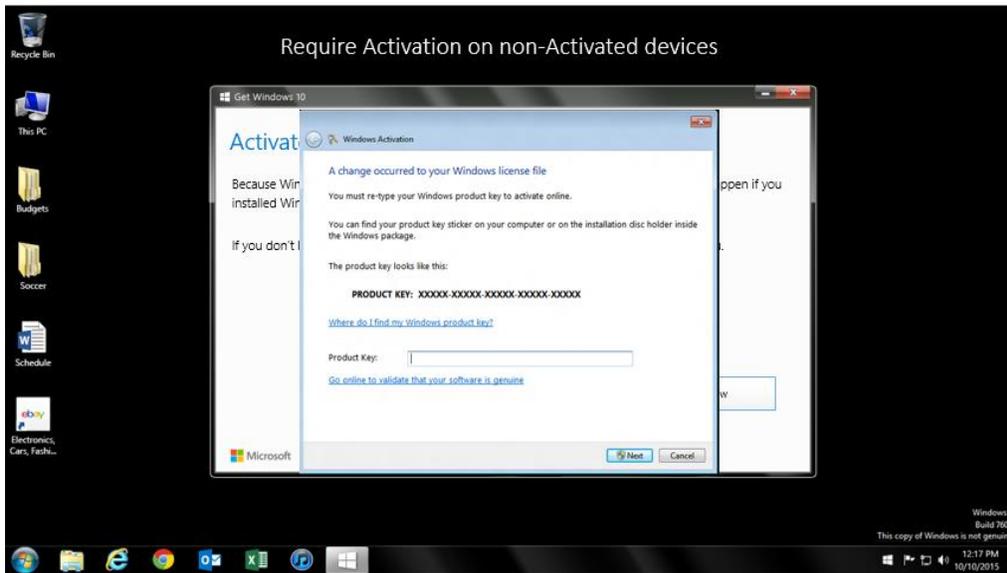
Activation window will appear during pre-upgrade preparations. When users start the upgrade, they will be asked to agree with terms and conditions.



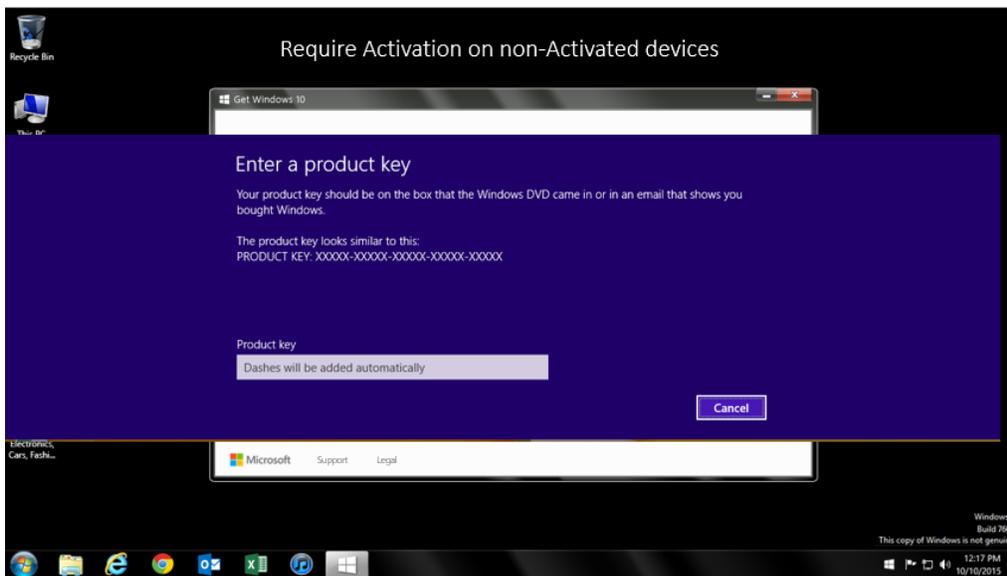
After clicking Accept, in the case that users are on a non-genuine copy of Windows, they will be asked to activate their Windows with a valid product key.

Users can click **Support** on the Activate Windows screen to purchase a product key if they do not have one. If they have one, they can click **Activate Now** and a pop-up will appear to enter their product key. If the customer activates on the phone, they can click **refresh** and they'll see a screen that says they are now activated.

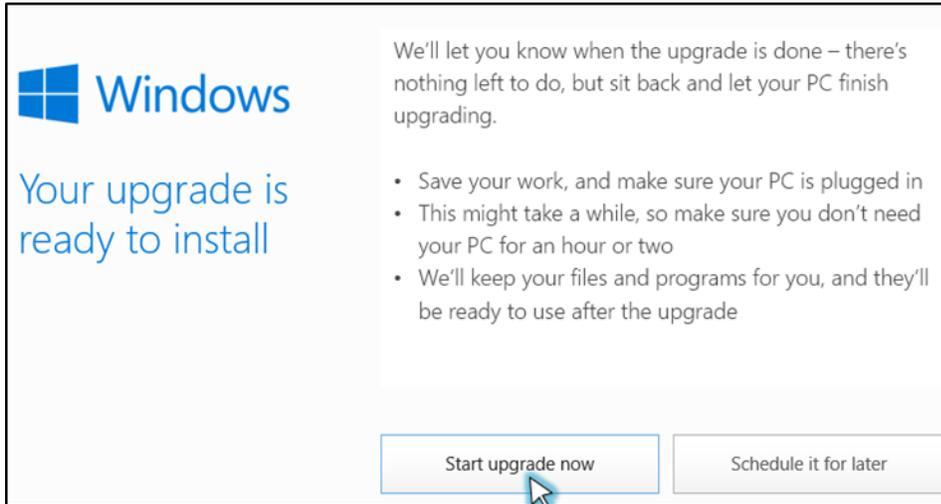
## Windows 7 SP1



## Windows 8.1 Update



Once Windows is activated, users will be able to progress with the installation.

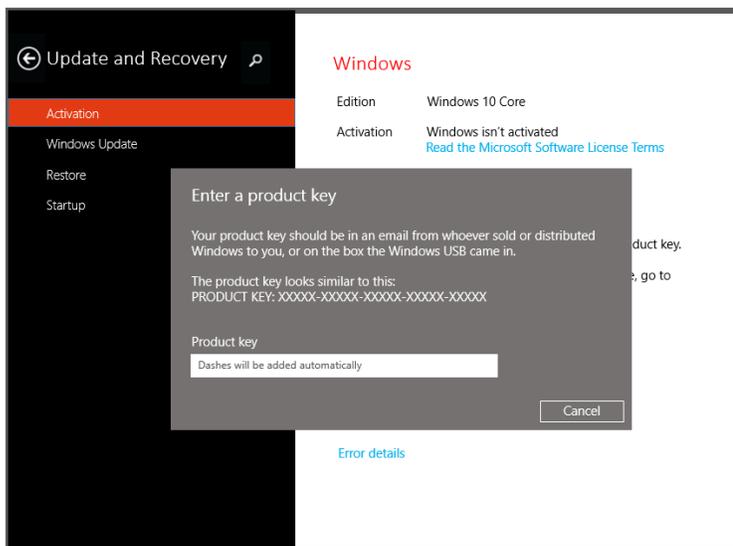


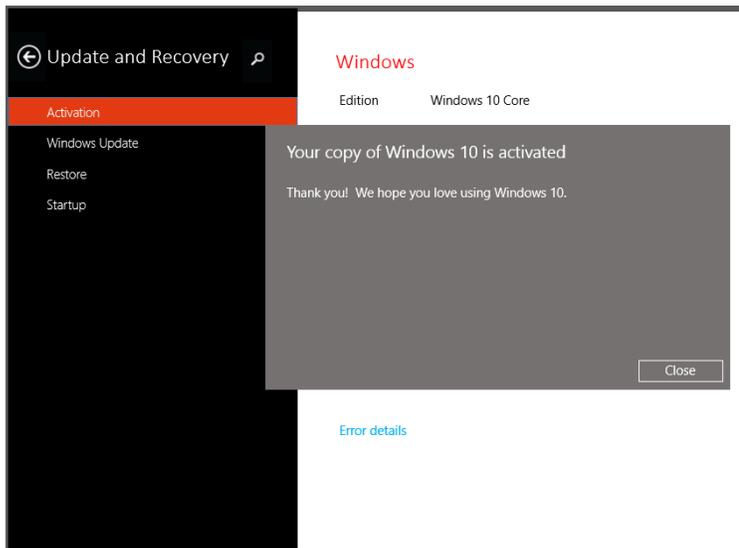
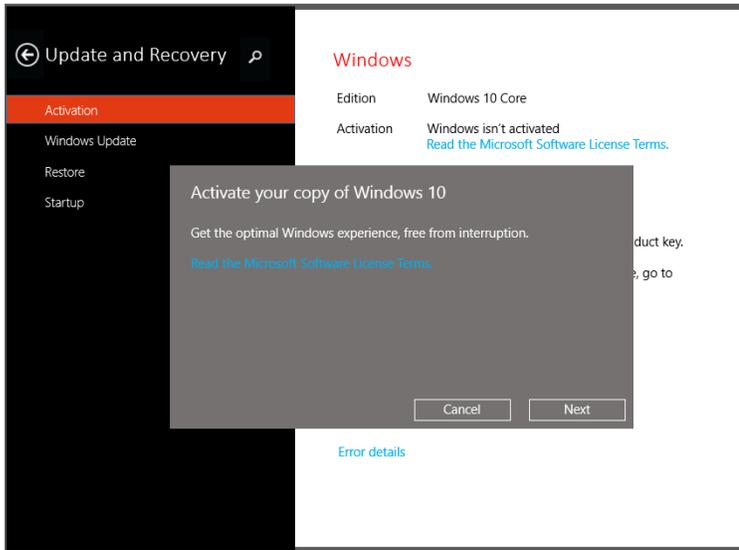
## Windows activation using 5x5 Product Keys

The goal since the release of Windows 8 has been to have Activation be a background experience that most users are not aware of, and Windows 10 will continue to leverage that. Users can go to Windows Update to check the status of their Windows 10 activation.

Windows 10 activation is done when the device is first connected to the Internet, which means that it will not happen until the device connects to the Internet. User can also try to activate Windows manually using Offline or Phone Activation if no internet connection is available.

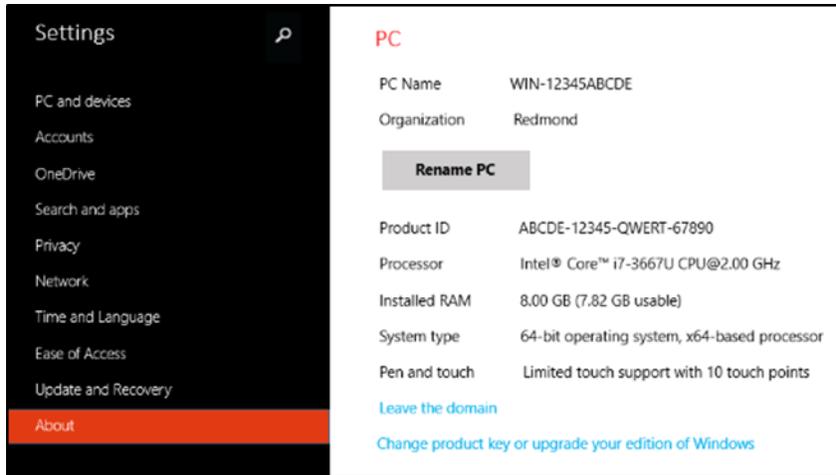
- **Activate Windows** button will try to connect and activate again.
- **Change Product Key** button will allow customer to enter a new product key and activate.





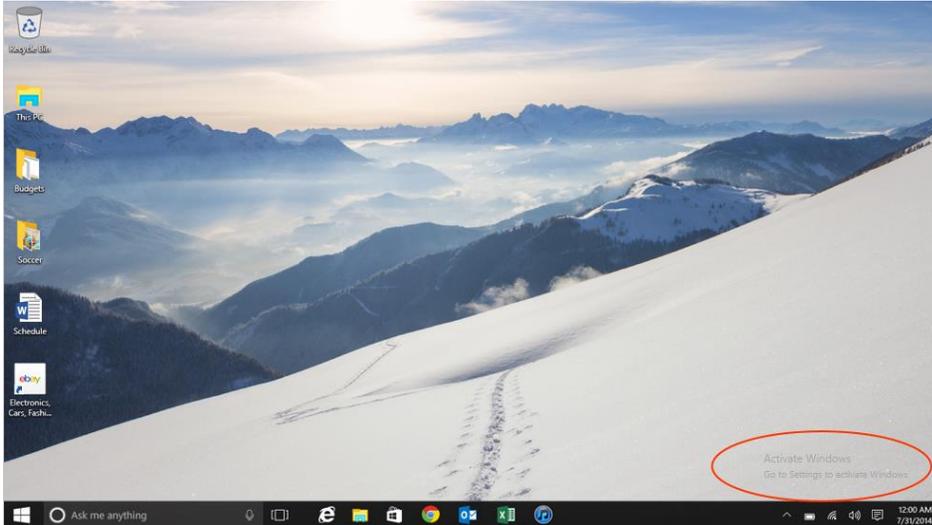
Apart from the **Update and Recovery** page, **About** page also has the option to change the product key or upgrade.

When a customer clicks this option, they will be redirected to the Activation Page.



## Windows activation/get genuine using Windows 10 client

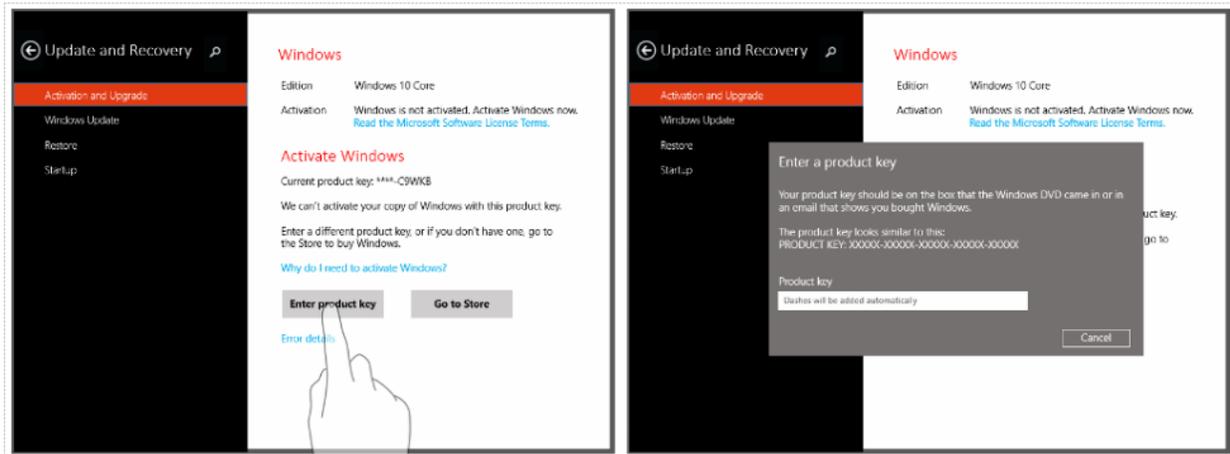
Installing Windows 10 without a valid 5x5 key or a previous Universal Store Digital entitlement will result in a non-genuine copy of Windows and the watermark will appear on the desktop. The customer will then have to go to the Settings page to complete activation or purchase a license.



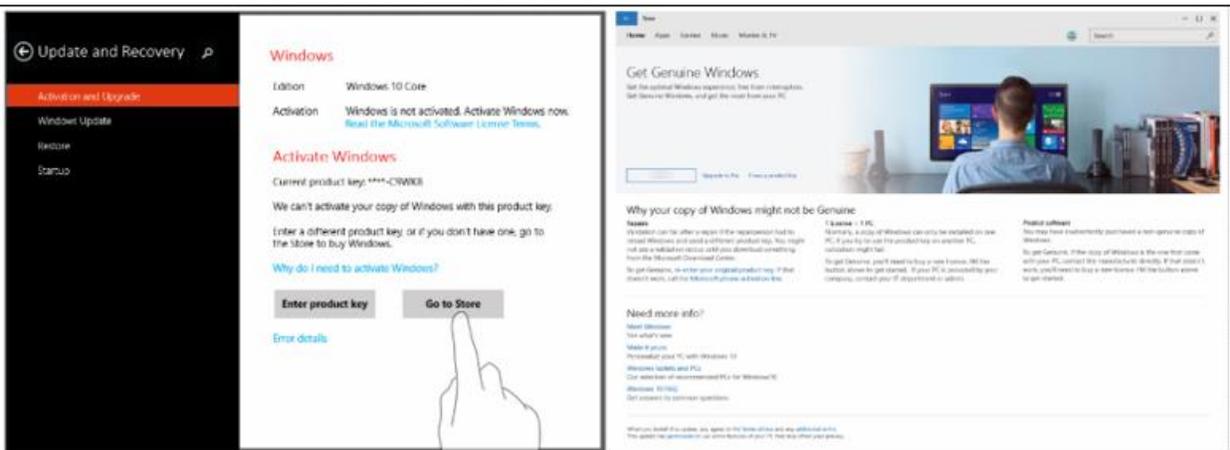
On the Activation page in Settings, customer will be able to see:

Key	Screenshot
<ol style="list-style-type: none"><li>1. Edition</li><li>2. Activation Status</li><li>3. If Activation fails, than a link to Activation FAQ.</li><li>4. Change product key: if the customer has a 5x5.</li><li>5. Go to the Store: To purchase a Windows Entitlement.</li></ol>	A screenshot of the Windows Settings application, specifically the 'Update and Recovery' section with 'Activation' selected. The 'Edition' is shown as 'Windows 10 Core'. The 'Activation' status is 'Windows isn't activated. Activate Windows now. Read the Microsoft Software License Terms'. Below this, there is a section titled 'Activate Windows' with the message 'We can't activate your copy of Windows with this product key. Enter a different product key, or if you don't have one, go to the Store to buy Windows.' There are two buttons: 'Change product key' and 'Go to the Store'. At the bottom, there is a link for 'Error details' and the current product key: '****-C9WKB'. Red circles with numbers 1 through 6 are overlaid on the screenshot to correspond to the key list.

If users click **Change Product Key**, they can enter a new product key for Windows 10 and try to activate Windows 10.



If users click **Go to the Store**, they go to OneStore (Universal Store) in order to see if they already have a digital entitlement for this device and if not, to purchase a Windows Digital Entitlement, which enables them to activate Windows 10. The Windows 10 licensing model for Consumer has changed to include a new licensing model, which is a **Digital Entitlement** downloaded through the Universal Store (OneStore), which is tied to the Hardware. No 5x5 is provided if user has an Entitlement.



# Recovery

## Overview

Windows 10 has the largest set of recovery tools and processes we have ever shipped with an operating system. The key is to know the right ones to use for the right situation and in the right order.

If there is no documented knowledge base solution for your given scenario, automated repair options are the safest form of recovery.

1. System Restore: Use this option to return to a previous restore point. Not available on drives of 128GB or less.
2. Go back to Previous Version: If the option to go back is present in the boot menu, this is the next recommended step. See Important Note below.
3. Reset this PC: Keep my files: This is the least invasive reset option. Customers will retain accounts, personal files, personal settings. Windows Store apps and Desktop apps must be reinstalled. OEM preinstalled customizations are also removed.
4. Reset this PC: Remove everything: This is most invasive reset option as it replaces the current Windows installation with a new one. Accounts, files, settings, OEM customizations and Windows Store apps will be removed.



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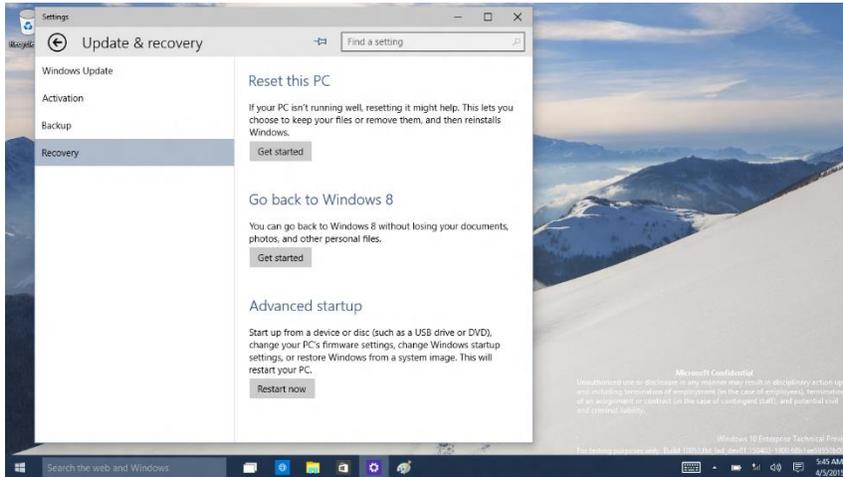
**Important Note:**

Reset removes the option to go back to the previous Windows build. If this option to go back is present on the PC, it should be considered before using Reset.

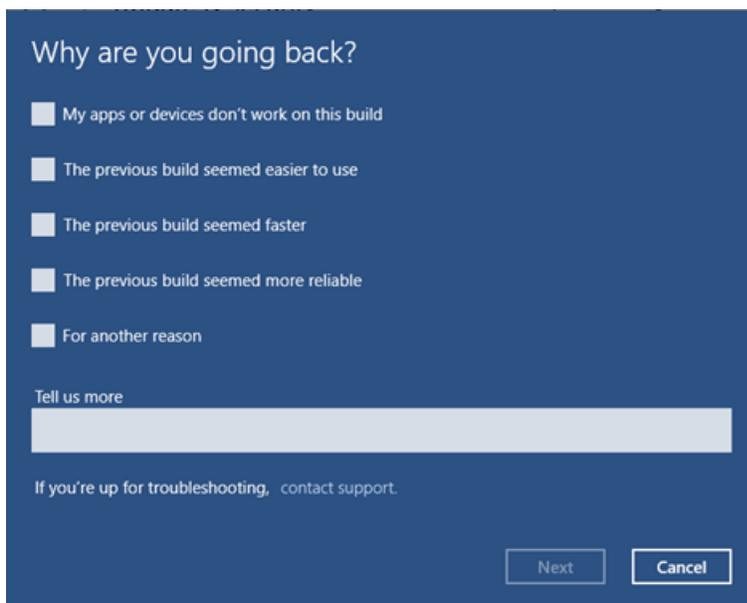
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## Go Back (sometimes called uninstall)

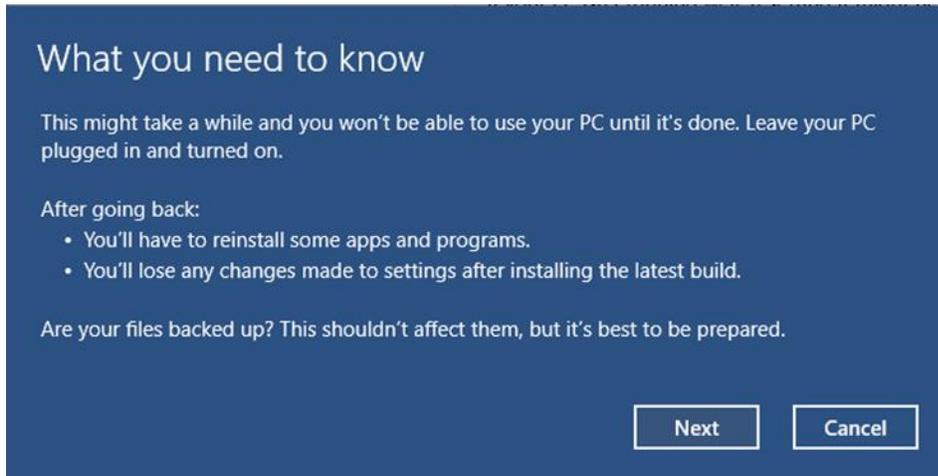
Within the first 31 days of installation, users can go back to their older Windows version directly from Windows 10 settings. After you have upgraded, either from a previous version of Windows or from an earlier Windows 10 build, you will have an option to Go back.



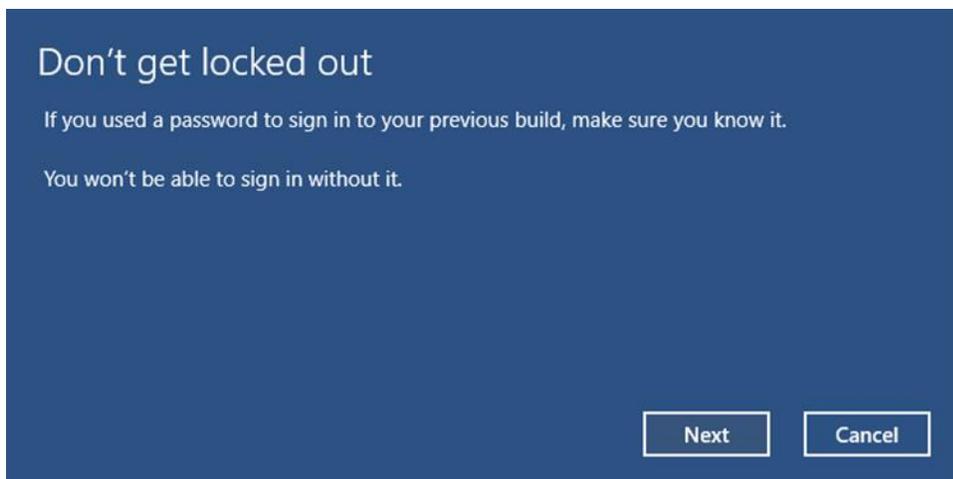
When the Get started button is clicked, they will be prompted a warning message stating the caveats of running this feature and a quick screen asking why they want to uninstall.

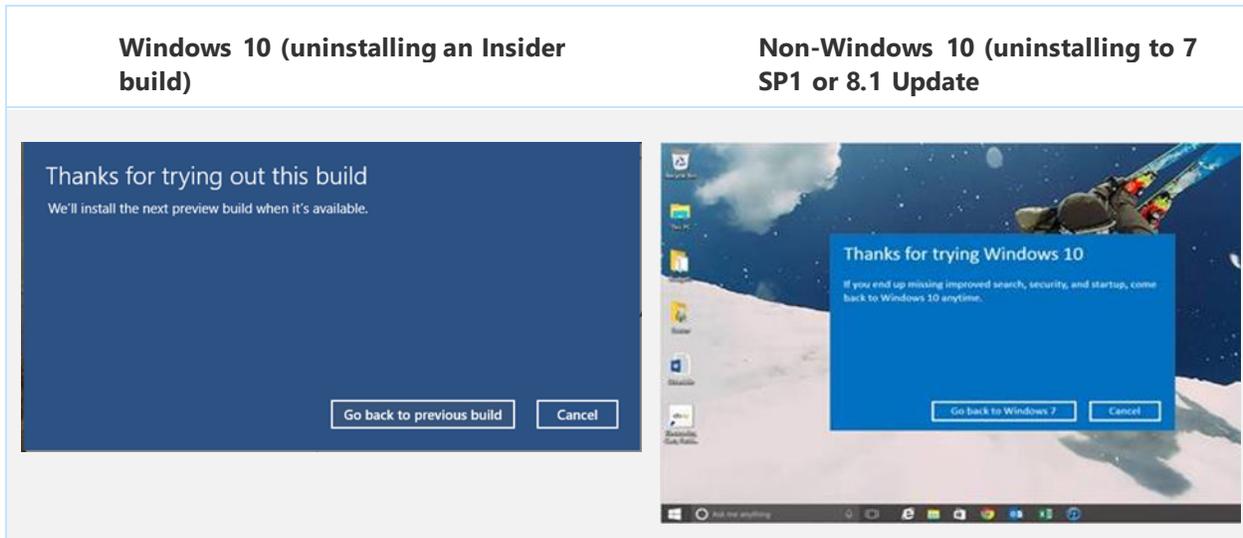
A screenshot of a blue dialog box titled 'Why are you going back?'. It contains five radio button options: 'My apps or devices don't work on this build', 'The previous build seemed easier to use', 'The previous build seemed faster', 'The previous build seemed more reliable', and 'For another reason'. Below these options is a text input field labeled 'Tell us more'. At the bottom, there is a line of text: 'If you're up for troubleshooting, contact support.' and two buttons: 'Next' and 'Cancel'.

A customer may click the contact support option for help with the issue that caused them to want to uninstall. This link opens the Contact Support app.



If the customer has changed their password since upgrading, they will need to know their previous password. This only applies to local accounts.



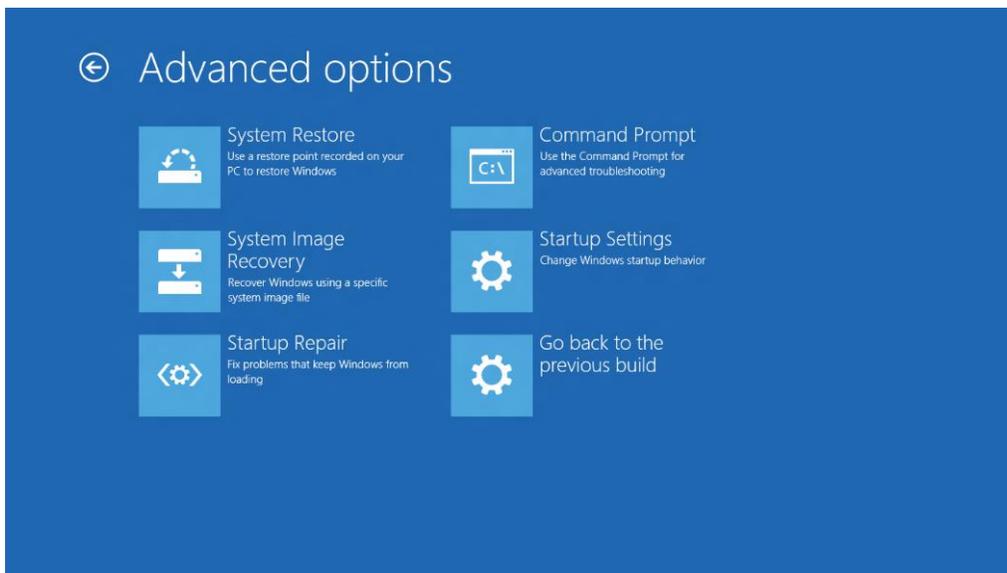


After this step, the PC will reboot to complete the Go back. After it's complete, you may need to reinstall apps if they are not functioning properly.

### Go back in the recovery environment

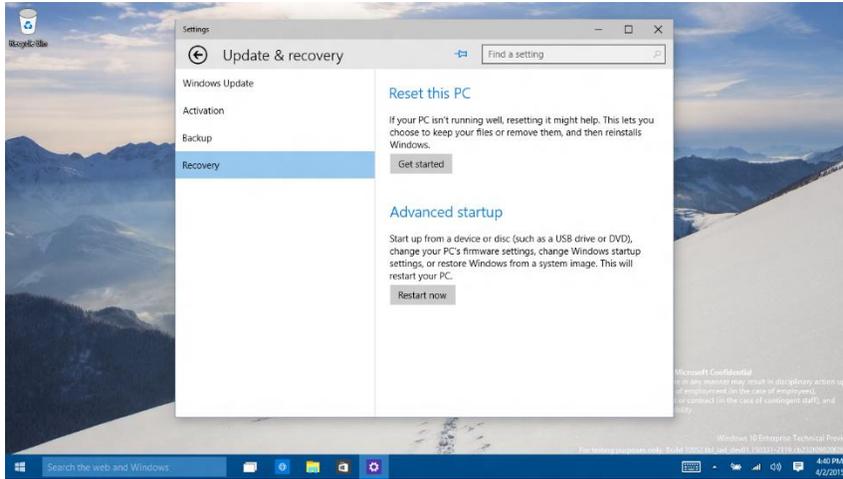
To uninstall in WinRE, navigate to **Troubleshooting > Advanced Options > Go back to the previous build**.

WinRE as an entry point should be used when Windows 10 cannot boot. Otherwise Go back should be initiated through Settings.



## Go back unavailable

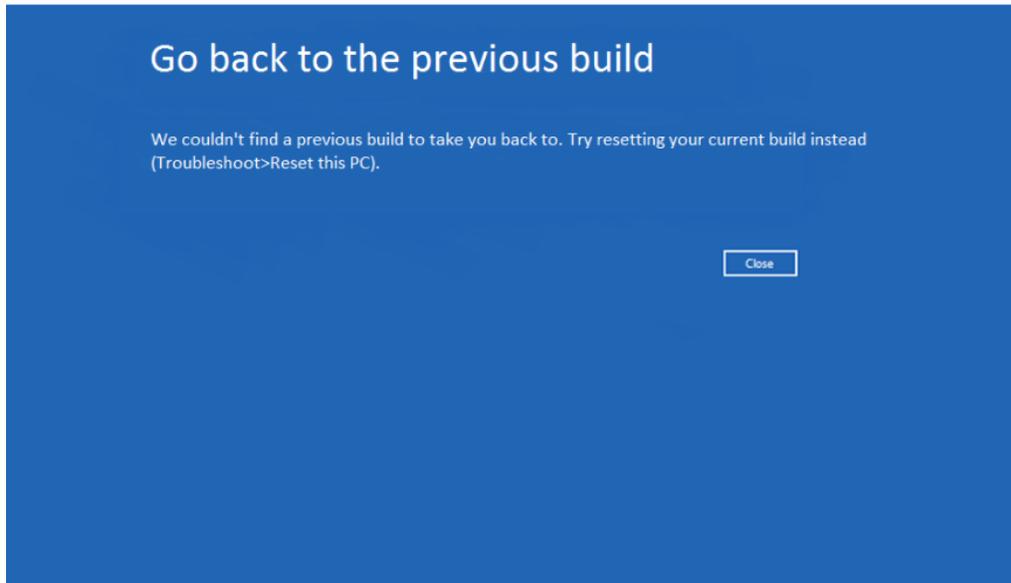
Once 31 days has passed, a maintenance task runs to remove the Go back files and options to save disk space.



There are some other ways that Go back can become unavailable:

- Adding new user accounts in Windows 10
- Running a reset on Windows 10
- Windows.old missing or damaged
- If the folder is deleted manually or by disk cleanup
- If the folder is damaged, such as by corruption or individual files being deleted, the Go back option may be available, but will not function properly.

Even when the Go back files are not available, you may still have the option to Go back in the recovery environment. However, selecting this option will present the following error.



## Returning to your previous OS

In addition to Go back, you can also return to your previous OS using one of these methods:

- **Restore Factory Settings:** As mentioned above, if your device came with Windows 8.x, you can use this option to return to the original factory install if the device was configured with an OEM image/partition.
- **Reinstall Windows:** In all other cases, if the option to Restore Factory Settings is not available, you can reinstall the previous version of Windows. To do this, use the recovery or installation media that came with your device. This is most typically a DVD. If the recovery media does not exist, you can create it using software provided by the device's manufacturer or from Microsoft if you purchased Windows from Microsoft.

## Reset

We have updated the Reset process so that it no longer requires a separate partition and takes up less disk space. We don't use a separate recovery partition, instead we rebuild the OS in place using files in the Windows Component Store (WinSxS). This significantly reduces the disk space impact of supporting Reset on Windows 10 PCs.

- You can do a Reset on a Windows 10 PC without needing separate media.
- When you Reset you get an updated OS.
  - Windows Update is moving to a rollup model where monthly updates will be cumulative in larger rollups that could be released quarterly or on a similar larger scale.
  - Reset restores to the latest Windows Update rollup state.

- 28-day window after installing a rollup where the PC will go back to the previous rollup state; allowing recovery to be effective in case there was an issue with the previous rollup and it needs to be removed.
- All language packs installed on the system at the time when a Reset is performed will be restored.
- OEM customizations are restored to factory state for devices that ship with Windows 10 (OEM Enabled)
- Upgraded devices have OEM customizations removed.
- Apps are handled as follows:
  - All user-installed desktop apps must be reinstalled. This is the same behavior as in Windows 8.x.
  - All in-box/pre-installed Store apps are restored to their original state. App updates will be downloaded and reinstalled via the Store automatically after recovery.
  - All user-installed Store apps must be reinstalled.

## Recovery from Media

Customers will now need recovery media to address the following scenarios:

- OS files have been heavily corrupted or infected
- Issues related to a rollup installed for more than 28 days
- For devices that ship with Windows 10, if the customer chooses the wrong language during OOBE on single-language SKUs

You can still create a recovery disk in Windows 10. If you create recovery media using the option in the OS, it will include Windows files, drivers, and OEM customizations. This media can be used to reinstall Windows on a PC with no OS.

## Reset Details

The following table shows what happens to each element of the PC configuration during recovery.

**Table 3: PBR New vs Upgraded PCs**

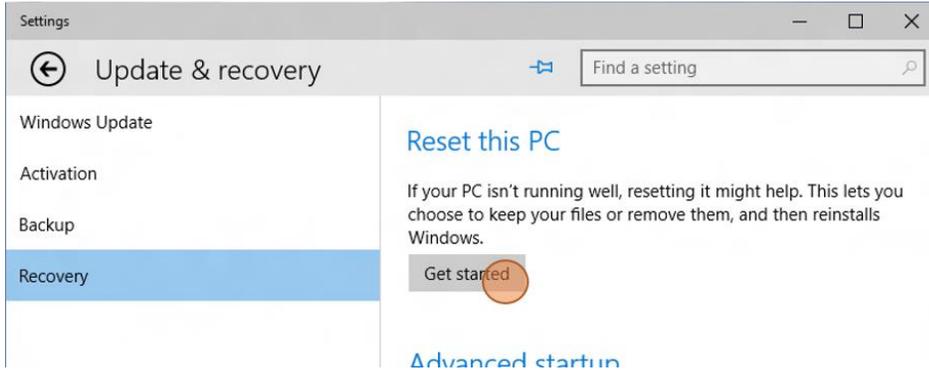
<b>Customizations</b>	<b>Installation Method</b>	<b>Restore to Factory State</b> <small>(Only for non-WIMBoot Win8.1 PCs)</small>	<b>Reset: Keep my files</b>	<b>Reset: Remove everything</b>
<b>OS</b>	Windows 7 -> Windows 10	N/A	Windows 10 with the latest rollup	Windows 10 with the latest rollup
	Windows 8/8.1 -> Windows 10	Windows 8/8.1		
	New Windows 10 PCs	N/A		
<b>Drivers</b>	Windows 7 -> Windows 10	N/A	All drivers before the latest rollup	All drivers before the latest rollup

	Windows 8/8.1 -> Windows 10	Factory-preinstalled drivers		
	New Windows 10 PCs	N/A		
<b>Store apps (OEM-preinstalled)</b>	Windows 7 -> Windows 10	N/A	N/A	N/A
	Windows 8/8.1 -> Windows 10	Factory-preinstalled apps	Windows 10 inbox apps only	Windows 10 inbox apps only
	New Windows 10 PCs	N/A		
<b>Store apps (User-installed)</b>	Windows 7 -> Windows 10	N/A	Must be reinstalled	Must be reinstalled
	Windows 8/8.1 -> Windows 10	Must be reinstalled		
	New Windows 10 PCs	N/A		
<b>Desktop apps (OEM-preinstalled)</b>	Windows 7 -> Windows 10	N/A	Must be reinstalled	Must be reinstalled
	Windows 8/8.1 -> Windows 10	Factory-preinstalled apps		
	New Windows 10 PCs	N/A	Restored to factory state	Restored to factory state
<b>Desktop apps (User-installed)</b>	Windows 7 -> Windows 10	N/A	Must be reinstalled	Must be reinstalled
	Windows 8/8.1 -> Windows 10	Must be reinstalled		
	New Windows 10 PCs	N/A		
<b>Other OEM customizations</b>	Windows 7 -> Windows 10	N/A	Must be reinstalled	Must be reinstalled
	Windows 8.0/8.1 -> Windows 10	Factory-preinstalled customizations are restored	Must be reinstalled	Must be reinstalled
	New Windows 10 PCs	N/A	Restored to factory state (except for settings preserved)	Restored to factory state
<b>User accounts, files and settings</b>	Windows 7 -> Windows 10	N/A	Retained	Not retained
	Windows 8/8.1 -> Windows 10	Not retained		
	New Windows 10 PCs	N/A		

The effect on user accounts, files and settings is the same in Windows 10 for reset as it was on Windows 8.1. The main difference is that all user installed apps must be reinstalled.

## Performing a Reset: Keep my files

This option is useful for users who think that their PC isn't running well.

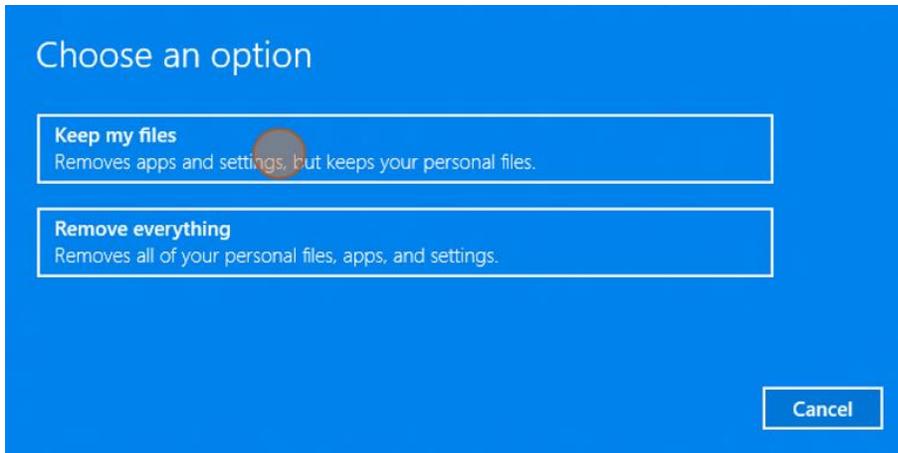


Using this option, they can reset their Windows 10 to its original state without losing photos, music, videos or personal files.

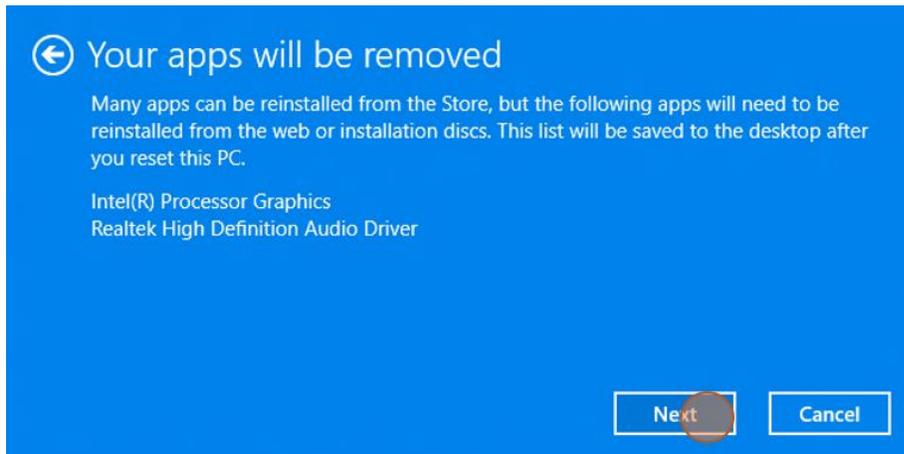


**Note:** Reset this PC will remove the ability to uninstall for users who have ungraded to Windows 10.

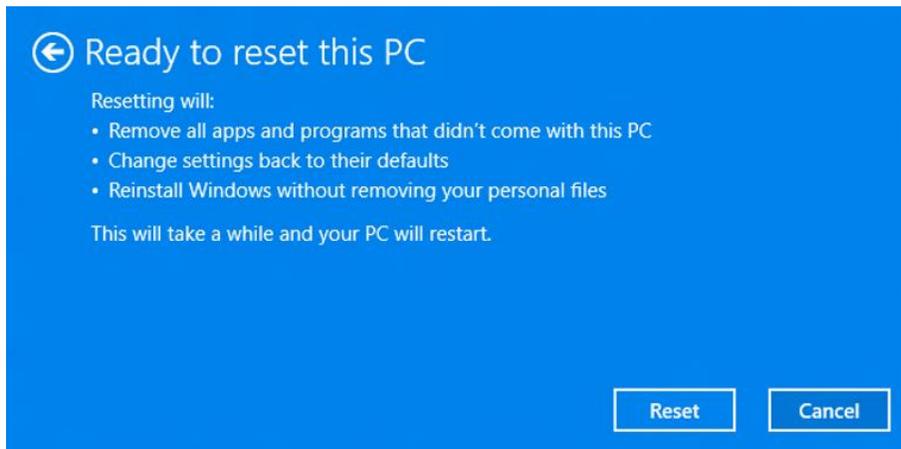
When the click Get Started, a pop-up windows will appear asking the user to choose between the two types of reset. This first path follows Reset: Keep my files.



After clicking **Keep my files**, users will see the list of apps which will be uninstalled as a part of reset process.



The user clicks **Next** and then **Reset** in the final window, reset operation will start.



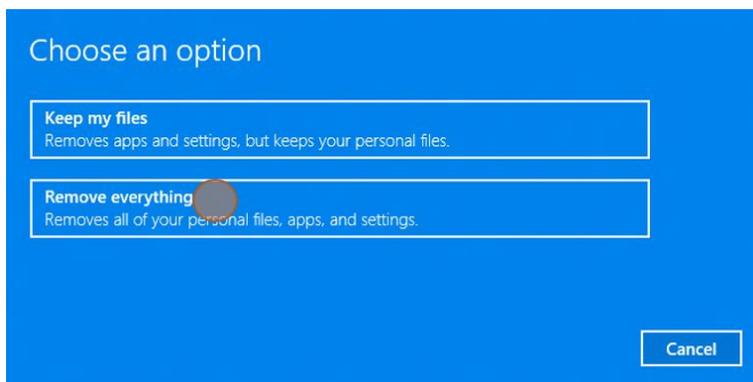
## Performing a Reset: Remove everything

This option is useful for the users who want to start their PC over completely. This option removes everything and reinstalls Windows.

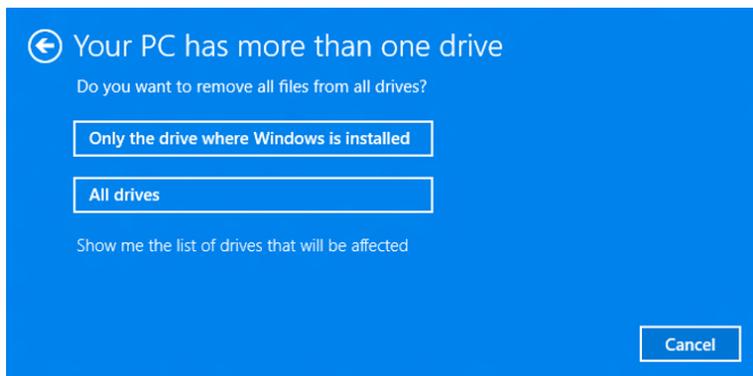


**Note:** Reset will remove the ability to uninstall for users who have ungraded to Windows 10.

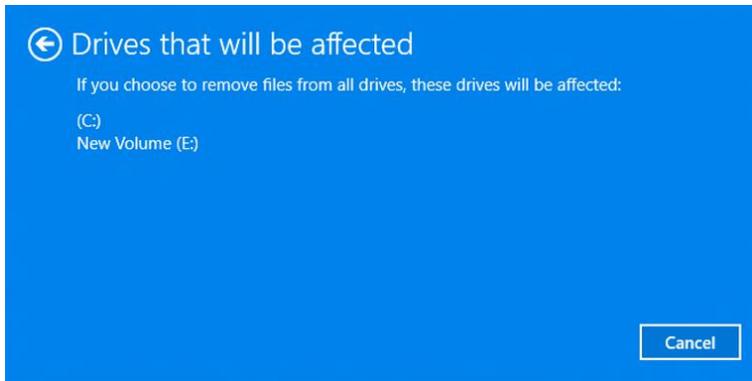
When users click **Get Started**, a pop-up windows will appear asking the user to choose between the two types of reset. This second path removes everything.



You may be given a choice to reset the drive that Windows is installed on or All drives.



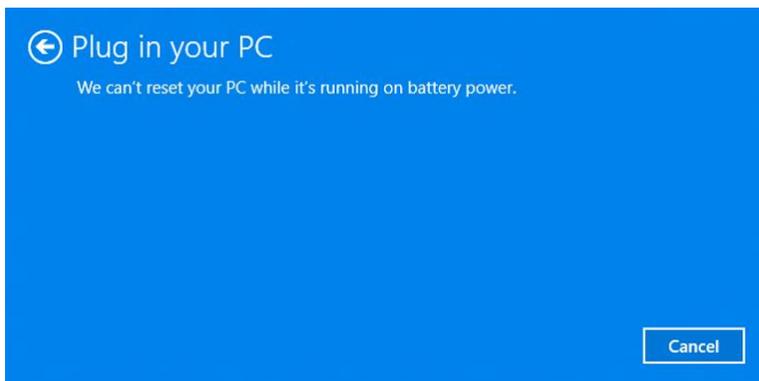
Clicking "Show me the list of drivers that will be affected" will display the driver list.



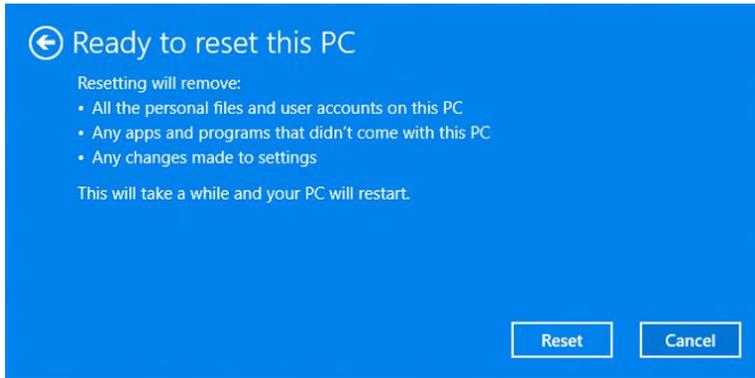
The user now has two choices. The second is used when a device will be handed to another user.



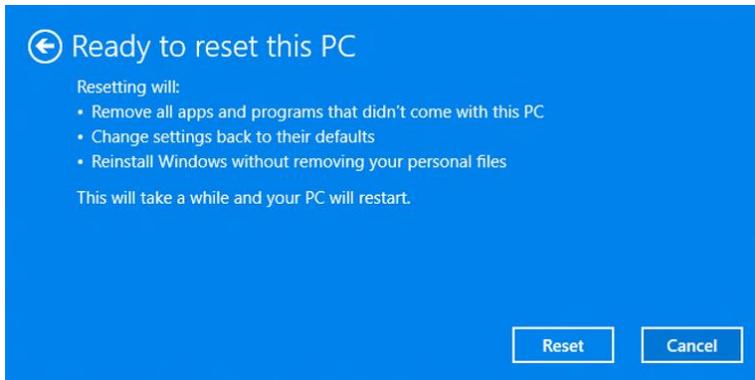
User will be reminded to plug in a device running on battery power.



The user will receive a summary page and **Reset** starts the process.



The user will receive a summary page and **Reset** starts the process.



## Performing a Restore Factory Settings

Customers who upgraded from Windows 8 or 8.1 on a PC with an OEM recovery partition will see a third recovery option as shown below.



This initiates a reset using the original OEM factory image.

# Driver and Compatibility Issues

## Troubleshooters

Package Name	Windows 10 Status
Video	New Troubleshooters
Apps	New Troubleshooters
BITS	New Troubleshooters
Connection to a Workplace Using DirectAccess	Confirmed
Hardware and Devices	Confirmed
HomeGroup	Confirmed
Incoming Connections	Confirmed
Internet Connections	Confirmed
Network Adapter	Confirmed
Playing Audio	Confirmed
Power	Confirmed
Printer	Confirmed
Recording Audio	Confirmed
Shared Folders	Confirmed
Windows Update	Confirmed (Update checked-in)
System Maintenance	Confirmed
Program Compatibility Troubleshooter	Confirmed
Search and Indexing	Confirmed

## Compatibility Checks

This table shows the compatibility checks performed, the type of check and the block type during upgrade. The block types are:

- **Upgrade blocked**
  - **Hard block:** User is blocked from upgrading his machine.
- **Action needed**
  - **Actionable:** user needs to take action before being able to continue with upgrade.
- **Informational**
  - **Informational:** user can't do anything about the issue but is made aware of it before continuing to upgrade.

Check	Type of check	Block Type	Shown in Upgrade Advisor	Shown in Setup UX	Comments/conditions	user facing text (suggested for Upgrade Advisor)
Enough free disk space	system capability	Action needed	Yes	Yes		You need to free up some space on your system drive
Bitlocker support on target OS (if different from host OS)	system capability	Action needed	Yes	Yes		You need to suspend bitlocker encryption
User has language pack installed	system capability	Informational	Yes	Yes		Language packs will need to be reinstalled after upgrade to Windows 10
Windows Media Center (check to see if it's actually used)	system capability	Informational	Yes	Yes		See detailed message
Encrypted Drive	system capability	Informational	Yes	Yes		You will need to decrypt or suspend encryption on your hard disk before upgrade, and can reenable it after upgrade to Windows 10
Processor checks (NX, Prefetchw, LAHF/SAHF, Sse2, CompareExchange128)	system capability	upgrade block	Yes	Yes		The CPU on the PC does not meet system requirements
BIOS	system capability	upgrade block	Yes	Yes		The BIOS on the PC does not meet system requirements
Pending Firmware updates	system capability	Action needed	Yes	Yes		You need to install all updates to your PC before upgrading to Windows 10
HDD controller checks	system capability	upgrade block	Yes	Yes		TBD
NIC card available	system capability	upgrade block	Yes	Yes		TBD
Boot from VHD	system capability	upgrade block	Yes	Yes		TBD
Boot from Windows to Go	system capability	upgrade block	Yes	Yes		TBD
User running in Audit mode	system capability	upgrade block	Yes	Yes		TBD
Host build is staged	system capability	upgrade block	Yes	Yes		TBD
Enough disk space on system partition	system capability	upgrade block	Yes	Yes		You need to free up some space on your system drive
User running in safe mode	system capability	upgrade block	Yes	Yes		TBD
User is running unstaged build	system capability	upgrade block	Yes	Yes		TBD
Language mismatch	system capability	Data and clean only; upgrade block	No	Yes	Blocks user from upgrading to Threshold as full upgrade is not available; valid for Setup only	TBD
Minimum prerelease build	system capability	Data and clean only; upgrade block	Yes	Yes	Blocks user from upgrading to Threshold as full upgrade is not available	TBD
Non-standard directory structure	system capability	Data and clean only; upgrade block	Yes	Yes	Blocks user from upgrading to Threshold as full upgrade (and data only) is not available	TBD
SOC block	Device compatibility - onboard & peripherals	Action needed	Yes	Yes	specific SOC devices blocked from upgrading; device needs to update to latest roll up of drivers to unblock	You need to install all updates to your PC before upgrading to Windows 10
Device will not work on upgrade	Device compatibility - onboard & peripherals	driver block	Yes	Yes	current driver is blocked, and no WU support on Windows 10	The following devices may not work properly after upgrade to Windows 10
PC will have a degraded experience	Device compatibility - onboard & peripherals	driver block	Yes	Yes	Graphics BDA is an example	Your PC will have a degraded display experience on Windows 10; Your PC will have a degraded audio experience on Windows 10; Your PC will have a degraded network experience on Windows 10
AM app - migration XML	Application Compatibility	mig XML	No	No	AM app will be replaced by Windows defender	N/A
Non AM app - migration XML	Application Compatibility	mig XML	No	No	Apps silently removed, but may or may not have a solution in Win 10 (Eg: Alcohol 120%)	N/A
App must be uninstalled before upgrade	Application Compatibility	Action needed	Yes	Yes	Once uninstalled, upgrade can proceed	The following apps must be uninstalled from the PC before upgrade
App must be uninstalled before upgrade, can reinstall	Application Compatibility	Action needed	Yes	Yes	App can be reinstalled after upgrade	The following apps must be uninstalled from the PC before upgrade and can be reinstalled after upgrade to Windows 10
App must be uninstalled before upgrade, or updated	Application Compatibility	Action needed	Yes	Yes	App has an update that must be installed before upgrade, or the app must be uninstalled	The following apps must be uninstalled from the PC or updated to a newer version before upgrade
App is incompatible on Windows 10	Application Compatibility	runtime app block	Yes	No	Does not block upgrade; soft or hard block on app runtime on Windows 10; app will not work properly on windows10; apps will be shown only if used, or marked as critical to be shown	The following apps may not work on Windows 10

# General troubleshooting articles

These are articles created to help agents with basic troubleshooting methods.

## Upgrade Rollback

### Overview

This procedure is designed to provide broad troubleshooting for upgrade rollback issues. You should use this procedure only if there is no issue-specific or error-specific guidance available.

### First Steps

1. Check for data backup - If the PC has had an issue with the upgrade, we should recommend extra caution if there is data on the PC that is not also saved elsewhere.
2. Check for known issues based on the error code. Try to resolve known issues with targeted actions before using the troubleshooting guidance below.
3. Ask if setup stalled and the PC was restarted manually, or if the upgrade rollback happened without user action. If setup stalled/hung, troubleshoot based on when the hang occurred. Prep for Upgrade and then re-try.
4. If it is a Surface, check the Surface site for steps to upgrade this specific model.
5. Note the upgrade path/method used.
  - o If the issue happens early in upgrade and they are using Windows Update to upgrade, consider using a downloaded ISO.
6. If installing from ISO, DVD or USB: Check Installation Media
  - a. Verify the source of the installation media. We support installation only when using a Microsoft-provided Windows 10 installation source. This means a download from a Microsoft site, or media provided by Microsoft.
  - b. If the installation source was a download and the symptom is not a known issue:
    - i. Check the ISO hash using FCIV.exe or another sha1 hash tool. For more info, see 889768.
    - ii. If the hash is mismatched with the published value, re-download.
    - iii. If the hash matches, mount the ISO and re-try setup, or re-create the media from the ISO if installing on a different PC.

## Scenarios

### Upgrade via Windows Update fails before the first restart

1. If using Windows Update: Use Windows Update troubleshooting procedures.
2. Re-try the upgrade.
3. If the failure returns and it is not a known issue, perform "Prep for Upgrade" steps.
4. Re-try the upgrade.

### Upgrade fails after one or more restarts

1. Perform "Prep for Upgrade" steps.
2. Re-try the upgrade.

### Prep for Upgrade

While performing these steps, watch for signs of malware infection. Upgrade is not recommended on an infected PC.

1. Update Windows so that all available recommended updates are installed.
2. Uninstall third-party antivirus software for the upgrade.
  - a. Use Windows Defender for protection during the upgrade.
  - b. Recommend that the customer check for compatibility information and re-install their preferred solution after the upgrade.
3. Uninstall any unneeded software.
4. Remove non-essential external hardware.
5. Check for and recommend installing updated firmware and drivers on the PC manufacturer website.

### Malware Infected PC

If the PC is found to be malware infected, we should recommend one of the following:

- Malware removal
- Clean install Windows 10.

We should not recommend upgrade on a malware-infected PC.

# Clean Install

## Summary

This procedure is designed to provide broad troubleshooting for issues with Windows 10 clean installation. You should use this procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

1. Licensing Considerations: (Details are to be determined)
  - a. Advise the customer on licensing considerations for Windows 10 clean install, using the separate content on this topic.
  - b. Ensure that the install will result in a licensed installation of Windows.
2. Check for known issues based on the error code. Try to resolve known issues with targeted actions before using the troubleshooting guidance below.
3. Verify that the PC meets the requirements for Windows 10.
4. If it is a Surface, check the Surface site for steps to install Windows 10 on this specific model.
5. Installing on a virtual environment? (Hyper-V, VMWare, VirtualBox, Parallels)
  - a. Recommend installing available updates on the PC hosting the VMs.
  - b. Recommend using the latest virtual environment/drivers.
  - c. Refer the customer to the virtual environment provider's website for compatibility guidance and steps.
  - d. If customer is installing to a Hyper-V Virtual Machine, they can receive paid assistance from Commercial support.
6. Installing on a Mac? (Boot Camp)
  - a. Basic steps are here: <https://support.apple.com/en-us/HT201468>
  - b. Recommend using the Boot Camp Assistant in Mac OS to download the latest Boot Camp.
  - c. For other assistance, check the Apple.com site for the latest support information on installing Windows 10 with Boot Camp.
7. If installing from ISO, DVD or USB: Check Installation Media
  - a. Verify the source of the installation media. We support installation only when using a Microsoft-provided Windows 10 installation source. This means a download from a Microsoft site, or media provided by Microsoft.
  - b. If the installation source was a download and the symptom is not a known issue:

- i. Check the ISO hash using FCIV.exe or another sha1 hash tool. For more info, see 889768.
- ii. If the hash is mismatched with the published value, re-download.
- iii. If the hash matches, mount the ISO and re-try setup, or re-create the media from the ISO if installing on a different PC.

## Scenarios

### New Hardware

If the hardware or configuration has never have an OS:

1. Check for the latest firmware.
2. Recommend performing hardware diagnostics to eliminate the possibility of hardware issues.
3. If no issues are found, then recommend downloading Windows 8.1. Try installing that version first using a default key.
4. If Both Windows 10 and Windows 8.1 fail, it is a hardware/firmware issue.

### Replacing Previous Install

1. Data considerations
  - a. Check for a Windows.old folder from the previous clean install attempt.
  - b. If present, ensure that the customer is aware it will be replaced during setup.
2. It is recommended that you start setup within the previous version of Windows, if possible.

# Windows Update

## Summary

This procedure is designed to provide broad troubleshooting for issues with Windows Update. You should use this procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

1. Check for known issues related to the specific Windows Update error. If there are error-specific steps, use them.
2. If the PC is unable to start properly in the middle of update installation, use the "Unable to Boot" steps.
3. If the problem started recently:
  - a. Was update installation working in the current Windows version in the past week? Use System Restore to return to a working state.
  - b. Was update installation working until the PC was updated to a new Windows 10 build? Consider going back to the previous build.
4. If there are no error-specific steps, but the issue can be identified as a Network issue, perform Network Troubleshooting.
5. Otherwise, use the Windows Update Troubleshooting steps below.
6. If the cause of the issue is unclear, use the Windows Update steps only.

## Scenarios

### Network Issue

1. Test the Internet connection by browsing to [microsoft.com](http://microsoft.com). Troubleshoot if not working.
2. Check the proxy configuration in Internet settings.
3. Change to a different connection type, if possible:
  - a. Ethernet to Wi-Fi or vice-versa.
  - b. Test on an alternate Internet connection. If not possible, try power-cycling modem/router.
  - c. Test a different Windows PC on the same Internet connection.
4. Check for and temporarily remove network software (if there is resistance to removal, you can try disabling first):
  - a. Internet security software.
  - b. VPN software (such as region-shifting solutions).
5. Update network adapter drivers, if updates are available.

6. Use steps for a "Windows Update Issue" below.

### Windows Update Issue

1. Reset Windows Update
  - a. Use the Windows Update Troubleshooter included with Windows.
  - b. Restart the PC.
  - c. Try installing one update to verify success.
2. Corruption Repair: DISM
  - a. Run "`dism /online /cleanup-image /restorehealth`" in an Admin CMD prompt
  - b. Note in the case whether problems were found, and if problems were fixed. Then proceed with the next step.
3. Corruption Repair: SFC
  - a. Run "`sfc /scannow`" in an Admin CMD prompt
  - b. Note in the case whether problems were found, and if problems were fixed. Then proceed with the next step.
4. Determine Next Steps
  - a. If corruption could not be repaired, a reset or reinstall is needed to fix Windows.

### Unable to Boot

Use these steps if you are unable to start the PC during update installation, or if the PC continually restarts into an update installation in progress.

1. Start the PC to the Recovery environment.
2. Use System Restore from to return to the restore point created during the update install.
3. If you are still unable to start the PC, Revert Pending Actions.
  - a. Boot to Recovery and open a Command Prompt.
  - b. Use DISM.exe to revert the pending update actions. You can do this with the following command, replacing "D:\\" with the Windows drive letter. "D:\\" is most common on Windows 7 and later:
    - `dism.exe /image:D:\ /cleanup-image /revertpendingactions`
4. If you are able to start the PC now, use the steps in "Windows Update Issue" above.
5. If these issues still don't resolve the issue, perform generic No Boot Troubleshooting.

# Apps and Windows Store

## Summary

This procedure is designed to provide broad troubleshooting for issues with Windows Store and Windows Store Apps. You should use this procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

1. Did the problem start recently?
  - o **Yes:** Use System Restore to return to the working state.
  - o **No:** Check for recently installed software in the Reliability Monitor.
2. Scope the issue:
  - a. Is the problem isolated to one app?
  - b. Are there any error messages when opening an app or Windows Store?
  - c. Has the app ever worked? If so, what may have changed?
3. Search known issues, such as a known symptom, issue with a specific app, etc.  
If there is specific guidance for the issue, try that first. Then use the procedure below which is most appropriate for the issue.



**Note:** Through the course of troubleshooting, watch for signs of malware infection as a potential cause.

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## Scenarios

### Issue Starting All Apps, or All Apps Crash/Hang

Use the following steps, checking after each step to see if the issue is resolved.

1. Install app updates
  - a. Note any additional symptoms found during this process, such as Internet connection issues or other errors.
  - b. If the app could not be reinstalled, perform the steps for the scenario: Issue installing Windows Store apps.
2. Perform the common troubleshooting steps in the Try These Steps Next section of this article.
3. Re-register all Windows Store Apps by running the following commands in a CMD window started as Administrator:
  - a. **PowerShell -ExecutionPolicy Unrestricted**

- b. `Get-AppXPackage -AllUsers | Foreach {Add-AppxPackage -DisableDevelopmentMode -Register "$($_.InstallLocation)\AppXManifest.xml"}`**
4. Check for issues elsewhere in Windows, such as with desktop apps. Troubleshoot based on the symptoms you find.

### Issue Starting Single App, or One App Crashes/Hangs

Use the following steps, checking after each step to see if the issue is resolved.

1. If the app is built-into Windows and cannot be removed, use the steps for issues with All Apps above.
2. Check for and install an update to the app.
  - a. Note any additional symptoms found during this process, such as Internet connection issues or other errors.
  - b. If the app could not be reinstalled, perform the steps for the scenario: Issue installing Windows Store apps.
3. If the app is provided by a third party, test with an app provided by Microsoft to see if it is a more general issue.
  - a. If the issue is specific to one third party app, check the recent reviews on the app's page in Windows Store to see if others are reporting the same problem.
  - b. If so, we should guide the customer to contact the app developer. Apps should have a support email link on the app page under Details, Learn More.
4. Perform the common troubleshooting steps in the Try These Steps Next section of this article.

### Issue Installing Windows Store Apps

Use the following steps, checking after each step to see if the issue is resolved.

1. Run `WSReset.exe`.
2. If the Store is unable to connect to the Internet:
  - a. Check for connectivity in Internet Explorer. If unable to connect, troubleshoot as you would any other Internet connection issue.
  - b. Check the proxy configuration in Internet Options, Connections, LAN settings. If there is a proxy configured, discuss with the customer to determine if it is needed, and clear the setting if it is not.
  - c. Perform other Internet connection troubleshooting.
3. Check the Microsoft Account
  - a. Go to Windows Store, Account and click Change user.
  - b. Sign in with the Microsoft Account. Do this even if the correct user is displayed as this will ensure that the account is working correctly.

4. Check the Date, Time and Time Zone configured for the PC.
  - a. For a reference, go to Bing.com on the customer's PC and search for "time". The results page should show the current time and time zone.
  - b. Verify that the location was found correctly, and then compare with the Windows configuration.
5. Run the Windows Update troubleshooter from within Windows, or using this link: <http://go.microsoft.com/?linkid=9830262> .
6. Perform the common troubleshooting steps in the **Try These Steps Next** section of this article.

### Windows Store won't Start, or Crashes

Use the following steps, checking after each step to see if the issue is resolved.

1. Run WSReset.exe.
2. Re-register Windows Store by running the following commands in a CMD window started as Administrator:
  - a. **PowerShell -ExecutionPolicy Unrestricted**
  - b. **\$manifest = (Get-AppxPackage Microsoft.WindowsStore).InstallLocation + '\AppxManifest.xml' ; Add-AppxPackage -DisableDevelopmentMode -Register \$manifest**
3. Perform the common troubleshooting steps in the Try These Steps Next section of this article.

## Try These Steps Next

### Common Troubleshooting Steps

Use the following steps, checking after each step to see if the issue is resolved.

1. Run the Apps troubleshooter included with Windows.
2. Install Windows updates.
3. If there is an error installing updates, resolve that issue first.
4. Temporarily disable the antivirus software and test installing an app.
  - a. If this resolves the issue, recommend that the customer check for updates, or provide assistance with removing it and enabling Windows Defender.
5. Repair damaged Windows files:
  - a. **Dism /online /cleanup-image /restorehealth**
  - b. **Sfc /scannow**

6. Check the output from these commands. If issues are found and not fixed, this must be resolved before further troubleshooting can be done. Go back to the previous Windows 10 build, reset Windows or take other action to restore a working configuration.

### **If the Issue is still not Resolved**

Use other relevant troubleshooting steps in this article first. If you are unable to resolve an issue using any of the steps in this article, the following steps can be used to return to a working configuration:

1. Clean boot troubleshooting.
2. Consider whether there were signs of a malware infection on the PC. If so, investigating this should be a priority.
3. Consider next steps:
  - a. Check for the option to return to the previous OS.  
Note that the steps that follow will remove this option. So it is important to stop here and consider if this is the best path.
  - b. If it is present, the issue started after the upgrade, and the previous OS was a Windows 10 build, use this option to go back.
4. New user account and profile:
  - a. Create a new local user account.
  - b. Configure it as an administrator.
  - c. Sign in with the new account and test.
  - d. If the issue is resolved, try connecting the account to the customer's Microsoft Account.
  - e. If the issue remains resolved, migrate data from the old user profile to the new one and provide guidance on removing the old account.
5. If still unresolved, consider using Reset to repair Windows.

# Devices and Drivers

## Summary

This procedure is designed to provide broad troubleshooting for issues with devices and drivers on Windows 10. You should use this procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

1. If the device worked on this PC recently:
  - a. Was Windows upgraded recently?
    - **Yes:** See Device Compatibility below.
    - **No:** Use System Restore
  - b. If System Restore resolved the issue, install Windows updates and check again.
2. If the device has never worked:
  - a. Try the device on another PC, if possible.
  - b. See Device Compatibility below.
3. If it's a printer, use Print Troubleshooting, rather than generic device and driver troubleshooting.
4. If it's an external device, use the External Device steps below first.

## Scenarios

### Device Basics

1. Use the Hardware and Devices troubleshooter in Windows.
2. Find the device in Device Manager
  - a. Listed with error? Search for guidance for the specific error code.
  - b. Not listed? Check for unknown or generic devices and update drivers.
3. Check the Driver information.
  - a. Update the driver.
  - b. Search the manufacturer's website for a newer driver version than is currently in use.  
Note: Do not obtain drivers from third party sites. The only drivers we should use are from the device manufacturer, the PC manufacturer, or from Microsoft.
4. If it worked before on this PC, Uninstall Driver, with the option to "delete the driver software for this device" enabled. Also uninstall any software for the device and then try again.  
Caution: Don't uninstall network/internet device drivers without first downloading the correct drivers. Be sure to provide clear steps that may be needed while the customer cannot connect to the Internet.

## Device Compatibility

Note that some device types typically do not require a manufacturer driver to provide basic functionality in Windows. This includes optical drives (CD, DVD, Blu-Ray), memory card readers, and hard drives

1. Check status on the Windows Compatibility Center
  - a. If a device is identified as not compatible with Windows 8, it will likely also be incompatible with Windows 10.
  - b. If a device is not listed, or is listed as compatible, but no drivers are available, check the manufacturer site for information.
2. Check for updated drivers from the device and/or PC manufacturer.

## Display device issues

1. If no display output can be seen on the display:
  - o Desktop PC? Check other outputs to see if they are working.
  - o PC with hybrid graphics? Recommend disabling this in the firmware settings as a test.
  - o Use Windows Key + P to try changing display devices/outputs.
2. If the output is visible but the quality is poor (lines, wrong colors, etc.):
  - a. Check for updated drivers from the display chipset manufacturer (e.g. NVidia, AMD/ATI, Intel).
  - b. Install the latest released version of the drivers. If this version is already in use, try the previous version.
3. Run DXDiag.exe and use the "save all information" option to save a dxdiag.txt file. Add it to the other data collected for escalation.

## External Device

1. Change connection:
  - a. Remove hubs from the connection path if they are in use. Connect directly to the PC.
  - b. Try a different port, on a different side of the PC if possible. For example: from the front to the back of the PC, or a different port/side of a mobile PC.
2. Follow Device Basics steps next.

# Startup Issues

## Summary

This procedure is designed to provide broad troubleshooting for issues starting a Windows 10 PC. This may also appear as an Automatic Repair loop, where the PC continues to start up offering Automatic Repair.

You should use this troubleshooting procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

1. Collect the exact error message. Use this to search the knowledge base for documented solutions/workarounds.
2. What changed since the last successful boot?
  - Was new hardware installed?
  - New apps installed?
  - Driver updates?
  - Were Windows Updates applied?
  - Was there a new build of Windows 10 installed?
3. What troubleshooting has already been done prior to contacting support?
4. Was there ever a successful boot since the last update/upgrade?
  - If this is a failed update, use Windows Update troubleshooting.
  - If this is a failed upgrade, use Windows Setup troubleshooting.

## Next Steps

### Boot Failure after Build Upgrade

If the boot failure happened after upgrading to a new build of Windows, consider using Go back to return to the previous build.

1. Start the PC to the boot menu.
2. Click Troubleshoot, then Go back to the previous build.



**Note:** It is important to use the go back option before using reset to repair the OS. Reset removes the files needed to uninstall.

---

This option is also available in Settings, Update & Security, Recovery. It is called "Go back to a previous version of Windows."

## Repair and Recovery Tools

If there is no documented knowledge base solution for your given scenario, automated repair options are the safest form of recovery.

1. Automatic Repair: This should be started by Windows automatically in the event of a startup failure. It can be forced by interrupting boot sequence 3 times in a row.
2. System Restore: Use this option to return to a previous restore point.
3. Go back to Previous Version: If the option to go back is present in the boot menu, this is the next recommended step. See Important Note below.
4. Reset: Keep my files: This is the least invasive recovery option. Customers will retain accounts, personal files, personal settings, and Windows Store apps. Desktop apps must be reinstalled. Note: Consider renaming only the system hive if reset fails <https://support.microsoft.com/en-us/kb/2823223/>
5. Reset: This is more invasive as it replaces the current Windows installation with a new one. Accounts, files, settings and Windows Store apps will be removed.



### Important Note:

Reset removes the option to go back to the previous Windows build. If this option to go back is present on the PC, it should be considered before using Reset.

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# Internet Connection

## Summary

This procedure is designed to provide broad troubleshooting for Internet connection issues. You should use this procedure only if there is no issue-specific or error-specific guidance available.

## First Steps

Before performing any other troubleshooting, use the build-in troubleshooters for issues with the Internet Connection and Network Adapter. Use the troubleshooter output to search for issue-specific troubleshooting recommendations.

## Next Steps

1. Check in Network Adapter settings to see if there is a network adapter available.
  - o If not, troubleshoot as a device issue. The network adapter may not be installed properly, or it may need a new driver.
2. Test the Internet connection by browsing to microsoft.com.
  - a. If browsing fails, test with a different site, like bing.com.
  - b. If all sites fail, test with a different browser - Edge, IE or a third party browser if one is already installed.
    - i. If only one browser fails, reset the failing browser.
    - ii. If both browsers fail, proceed with the below steps.
3. Check the proxy configuration in Internet settings.
4. Change to a different connection type, if possible:
  - a. Ethernet to Wi-Fi or vice-versa.
  - b. Test on an alternate Internet connection.
  - c. If the problem is specific to the home Internet connection, try power-cycling modem/router.
5. Test a different Windows PC on the same Internet connection.
6. Check for and temporarily remove network software (if the customer is resistant to removing it, you can try disabling first). This includes software like:
  - o Internet security software.
  - o VPN software (such as region-shifting solutions).
  - o Network utility software which is not known to be compatible with Windows 10.
7. Update network adapter drivers, if updates are available.