

Windows Autopilot Cookbook Surface Edition

Deployment Guide for CSP Partners

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Introduction

Traditionally, IT pros spend a lot of time building and customizing images that will later be deployed to devices that already have a perfectly good operating system. Windows Autopilot uses a collection of technologies to set up and configure Windows devices in a zero-touch deployment approach. This enables IT departments to configure and customize images using cloud resources instead of maintaining their own infrastructure. When users first receive a Surface device, all they need to do is connect to a network and verify their credentials. Everything after that is fully automated. Windows Autopilot enables IT admins to do the following tasks:

- Automatically join devices to Azure Active Directory (Azure AD).
- Auto-enroll devices into MDM services, such as Microsoft Intune (requires an Azure AD Premium subscription).
- Restrict the Administrator account creation by ensuring that the first person who logs into Windows is configured as a standard user.
- Create and auto-assign devices to configuration groups based on a device profile.
- Customize the OOBE (Out of Box Experience) introductory text and branding for the customer's organization.
- Enable the complete configuration of the device using Microsoft Intune.
- Reset or restart devices remotely.

Prerequisites for Autopilot

Autopilot requires a Microsoft 365 Enterprise environment in Intune.

Requirement	Description
Azure Active Directory Premium	Required to enroll your devices in your organization and to automatically enroll devices in your organization's MDM solution. Users must be allowed to join devices into Azure AD
Mobile Device Management (MDM)	Required to remotely deploy applications, configure, and manage your enrolled devices.
Microsoft 365 Apps for enterprise (Optional)	Microsoft 365 Apps, formerly known as Office Pro Plus, is required if you wish to include Microsoft Office in your deployment to your enrolled devices.
Windows devices with Windows 10 RS3 1709 or higher	Devices must leave the factory with a minimum version of Windows 10 RS3/1709. Devices manufactured after January 2018 should meet this requirement. Recommended: Windows 10 1903 or later.

These requirements are also met by one of the following solutions:

License	Description
Microsoft 365 E3 or E5	Includes Azure Active Directory Premium, Microsoft Intune, and Microsoft 365 Apps for enterprise
Enterprise Mobility Security E3 / E5	Includes Azure Active Directory Premium and Microsoft Intune
Microsoft 365 Apps for enterprise E3 or E5	Includes Microsoft 365 Apps for enterprise

Network connectivity requirements

The Windows Autopilot Deployment Program uses several cloud services that need to be accessible from devices registered as Windows Autopilot devices. To manage devices behind firewalls and proxy servers, the following URLs need to be accessible:

- https://go.microsoft.com
- https://login.microsoftonline.com
- https://login.live.com
- https://account.live.com
- https://signup.live.com
- ctldl.windowsupdate.com
- <u>download.windowsupdate.com</u>

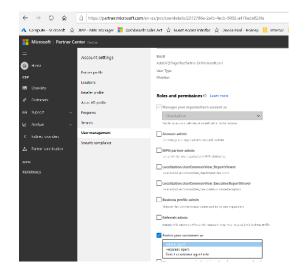
IMPORTANT:

Where not explicitly specified, both HTTPS (443) and HTTP (80) need to be accessible. If you're auto enrolling your devices into Microsoft Intune, or deploying Microsoft Office, follow the networking guidelines for Microsoft Intune and Office 365.

CSP Microsoft Partner Center requirements

This guide is intended for Cloud Solution Providers (CSPs) with access to the Microsoft Partner Center. The following roles are also supported:

- Indirect CSP resellers can get direct authorization from customers to register devices through the Partner Center UI (manually uploading a .csv file),
- Indirect CSP provider partners (distributors) can register devices through the Partner Center UI with an additional option to register devices using the <u>Microsoft Partner Center APIs.</u>
- Microsoft Partner Center (MPC) users with Admin Agent permissions.



Register devices to Autopilot

To deploy Surface devices using Windows Autopilot, register hardware IDs (HW IDs) to the Autopilot Service. There are several ways to register HW IDs.

- CSP partner submits registration requests to Microsoft Support
- CSP Partner registers devices using Microsoft Partner Center
- <u>Customer registers devices using Intune</u>

CSP partner submits requests to Microsoft Support

A simplified process of registering Surface devices for Windows Autopilot deployment is now available from Microsoft Support. Customers and CSPs can register Surface devices by submitting requests to Microsoft Support. To learn more, see <u>Surface Registration Support for Windows Autopilot</u>.

Required information for Autopilot registration requests to Microsoft Support

Required	Description	Autopilot	Hardware	Autopilot
information		Registration	Hash Request	Deregistration
Azure Active	Your Azure Active Directory tenant ID is a globally	Υ	N	Υ
Directory Tenant ID	unique identifier (GUID) that is different from your			
	organization name or domain.			
	To find your Tenant ID, sign in to the Azure Portal <u>here</u> .			
Azure Active	Your top-level domain name; for example,	Υ	N	Υ
Directory Domain	contoso.com.			
Name				
Proof of ownership	Verify proof of ownership by uploading the original	Υ	Υ	Υ
	bill of sale or invoice in PDF format. Screenshots are			
	not accepted.			
	The bill of sale or invoice must include the following:			
	- Device serial numbers.			
	- Company name.			
Device serial	Upload Excel file in .csv format with each device	Υ	Υ	Υ
numbers	serial number in a new line.			

CSP Partner registers devices using Microsoft Partner Center

Microsoft Surface devices produced after Jan 2018 can be registered by device resellers (with active CSP partner status) as part of the ordering process. Partners must already have established business relationships with customers. The following information is required.

- Serial number of the device
- Microsoft Corporation as the OEM name
- Device Model

```
File Edit Search View Ercoding Language Settings Tools Mucro Run Plugins Window ?

Device Serial number, Windows product ID, Hardware hash, Manufacturer name, Device mod 2 043333388453,,, Microsoft Corporation, Surface Pro, 3 047030782453,,, Microsoft Corporation, Surface Pro 7, 4 047484942453,,, Microsoft Corporation, Surface Laptop 3, 5 044784844853,,, Microsoft Corporation, Surface Book 2, 6 044784747753,,, Microsoft Corporation, Surface Go, 7
```

For the official device model names, refer to Surface System SKU reference.

NOTE: The registration process can also be automated using Microsoft Partner Center APIs.

For more detailed information, refer to Register Devices via Microsoft Partner Center below.

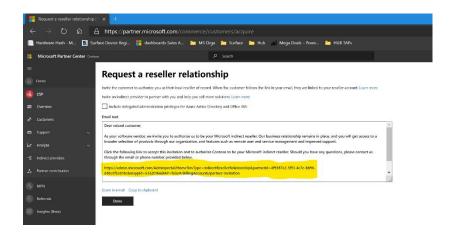
Getting started

We recommend partners interested in offering Microsoft 365 modern manageability services such as Windows Autopilot investigate the steps needed to become a Microsoft CSP. To learn more, refer to the Microsoft Cloud Solution Provider landing page. You can start by first becoming an Indirect Reseller and work with your Indirect Provider to sell licenses and services.

Requesting a Customer Relationship

Enrolling devices into Autopilot on behalf of a customer requires establishing a relationship with that customer in Microsoft Partner Center.

1. To request a relationship, copy the text from the following figure and email it to the PoC tenant administrator. This text includes a link, as highlighted in the following figure:



- 2. To register and deregister devices to Autopilot, the customer needs to authorize you as a reseller for their account. This can be done in two ways: With delegated admin privileges or without delegated admin privileges. make sure to ask the customer which of these requests you should be sending.
- 3. If the customer does not want to give delegated admin privileges, clear the checkbox that indicates Include delegated admin privileges for AAD and O365. Regardless of delegated admin rights, you can still register and deregister devices on the customer's AAD tenant.
- 4. If the customer does need you to have additional permissions for example, to manage AAD, M365, Intune, or related services -- select the checkbox Include delegated administrator privileges for Azure Active Directory and Office365. To learn more, refer to Request a relationship with a customer.

Customer registers devices using Intune

Customers can use Microsoft Endpoint Manager and Intune to enroll devices in Windows Autopilot and register the devices as organization-owned. To learn more, refer to the <u>Windows Autopilot Deployment</u>

<u>Program documentation</u>. (Note however that this document focuses on the interaction with the Microsoft Partner Center. The Intune registration is more appropriate for testing purposes.)

NOTE: The .csv file format in Intune is different from the .csv file format used for the MPC registration approach.

With Intune, a .csv file containing the hardware IDs of the POC Surface devices needs to be uploaded:

Prepare your Surface device

- Make sure that you have your Surface device in an OOBE state.
- Before the Surface device gets back onto the network, its HW ID must be registered to the Autopilot service.
- Surface devices are running Windows 10 1903 or higher.

Devices registered in Autopilot as organization-owned will initially appear in the organization's Azure Portal. Once devices have been deployed with Autopilot and enrolled automatically in the MDM tool, the devices will appear in Microsoft Intune and can be managed like any other device in Microsoft Intune. Policies and apps will deploy to the device according to the user profile logged in. To learn more, refer to the Microsoft Intune documentation.

TIP: To check the OS version of the device, open a command prompt and enter winver. If the device is booting into OOBE, enter +F10 to get a command prompt. For current in-market Surface Devices including Surface Laptop 4, Surface Laptop 3, Surface Pro 7+, Surface Pro X, the OS version is printed as barcode label on the shipping box.



To reset current in-market devices to OOBE

- 1. Fully update the device using Windows Update. Reboot the device.
- 2. Sign in with an Admin account.
- 3. Open the **Settings** app and select **Update & Security > Recovery**. Under Reset this PC, select **Get started** and choose **Remove everything**.
- 4. When the reset process is completed, the first OOBE screen appears.

To reset earlier Surface devices to OOBE

• Apply a recovery image following the instructions on the <u>Surface Recovery Image Download</u> page.

TIP: If the recovery image or existing OS is not running at least Windows 10 1903, upgrade to Windows 10 1903 or later via Windows Update and then reset the OS.

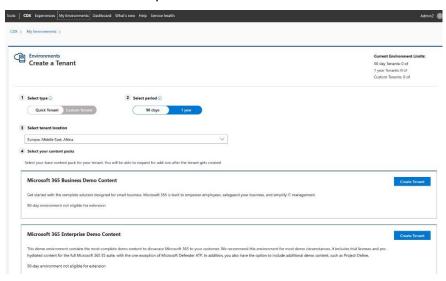
To demonstrate the client-side experience of Windows Autopilot, use a device running Windows 10 Pro, Enterprise, or Education SKUs. Windows 10 Home does not support Autopilot.

Prepare an Azure tenant

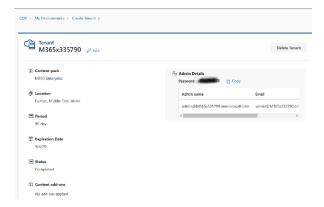
Get your demo tenant from CDX

As a Microsoft partner, you can create a new demo tenant by visiting https://CDX.transform.microsoft.com.

- 1. Sign in with your partner credentials and select **My Environment > My Tenants > Create Tenant**, and then choose your preferences:
 - Select Quick Tenant, 90 days
 - Select tenant location: your preferred location.
- 2. Choose Microsoft 365 Enterprise Demo content and select Create Tenant.



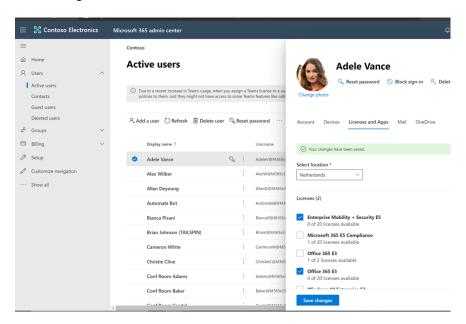
3. Note the tenant name and access details for the administrator and user.



Select a demo user

1. Sign-in to your demo tenant as administrator to https://admin.microsoft.com, select Users > Active Users and choose a user.

- 2. Select Licenses and Apps and select the following:
 - Enterprise Mobility Security E5
 - Office 365 E5
- 3. Save Changes.

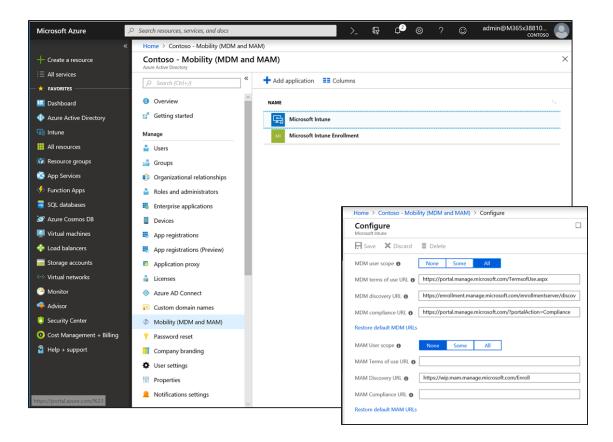


AAD and Intune setup

Before Windows Autopilot can be used, some configuration tasks are required to support common Autopilot scenarios.

Configure automatic MDM enrollment

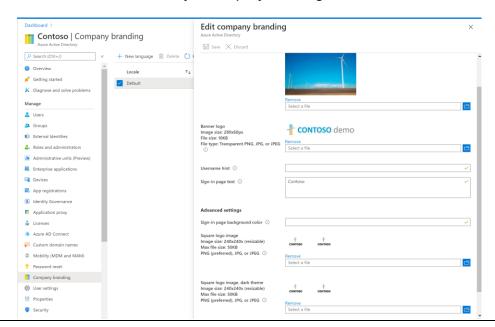
- 1. Sign in to https://portal.azure.com using the admin credentials provided for the tenant and enable MDM for all POC users.
- 2. Navigate to **Azure Active Directory>Mobility** (MDM and MAM) > select **Microsoft Intune** and make sure that under MDM user scope **ALL** is selected. Repeat this for Microsoft Intune Enrollment as well.



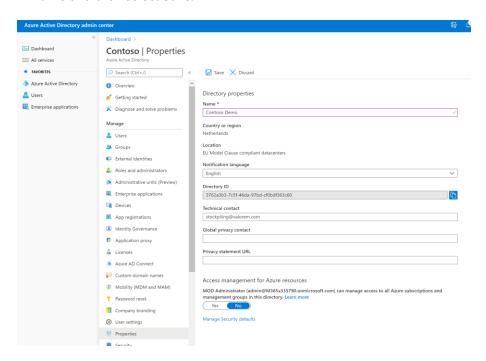
Configure company branding

For your company branding to appear during OOBE, you first need to configure it in Azure Active Directory. For more information, see <u>Add company branding to your directory</u>. The following branding settings are required: Background image, Banner logo, Square logo, and Square logo dark.

1. Select Azure Active Directory > Company branding > Edit.



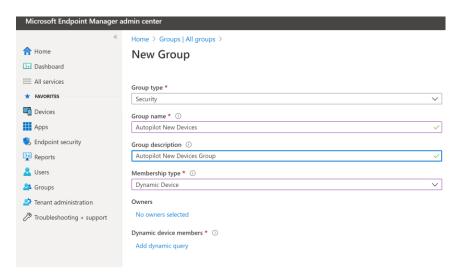
To adjust the tenant name that will be displayed during OOBE open Azure Active Directory > Properties
 Name and then select Save.



Create Azure AD Group for all new Autopilot devices

Create an Azure AD group that all new devices will automatically join to use Autopilot.

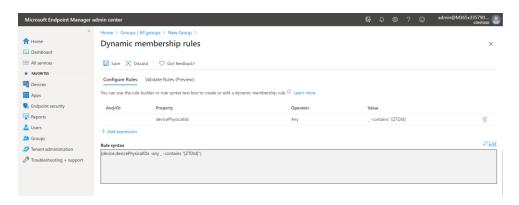
1. Go to https://endpoint.microsoft.com > Groups and select +New group.



- Make it a Security Group, name it Autopilot New Devices, and add a description (optional). Under Membership type choose Dynamic Device and select Add dynamic query.
- 3. Select Edit dynamic query, select Edit (see top right of Rule syntax box), and enter the following rule

syntax: (device.devicePhysicalIDs -any _ -contains [ZTDId]).

4. Then, select **OK** and then select **Save**.

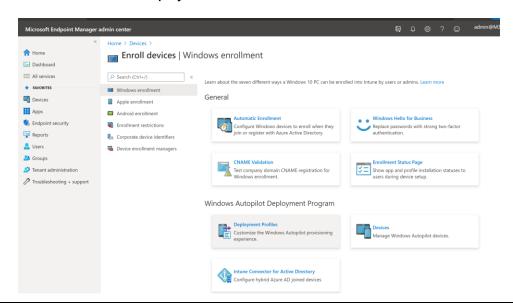


- 5. On the New Group page select **Create**. All devices subsequently registered to Autopilot for this tenant will be members of this group. To assign profiles and settings to the group, refer to the section below.
- 6. To assign profiles and settings to an individual device, add it to the **Autopilot New Devices** group.

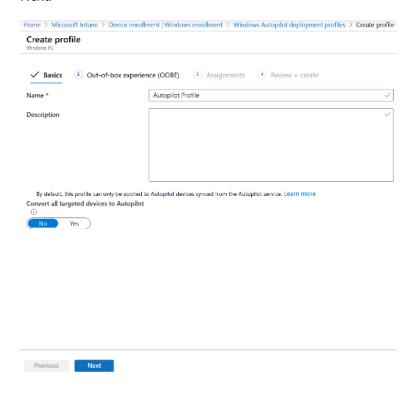
Configure an Autopilot deployment profile

An Autopilot deployment profile is a collection of settings used to configure a device during a Windows Autopilot deployment. The Autopilot profile allows automation of most aspects of OOBE but does not let you skip pages specifying language and keyboard or connecting to Wi-Fi. Users must first join the device to a network to provide connectivity to the Autopilot service. Prompts to configure Windows Hello and PIN that occur after OOBE are also still presented to the user.

Go to https://endpoint.microsoft.com > Devices > Enrollment devices, make sure Windows enrollment is selected and choose Deployment Profiles.



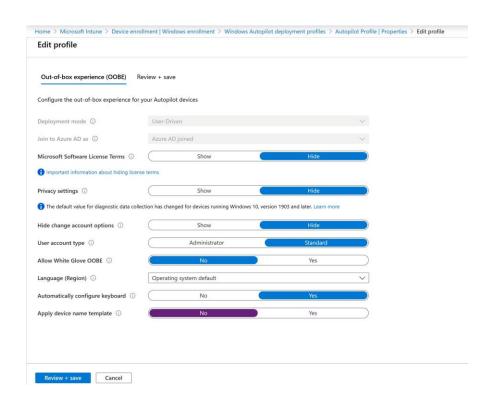
- 2. Select Create profile. Or if you use the CDX prepopulated tenant, you can select and check the settings of the already configured Autopilot Profile.
- 3. On the **Basics** screen, name the profile **Autopilot Profile**, add a description (optional), and then select **Next**.



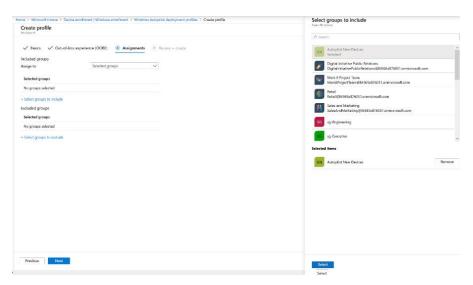
- 4. On the OOBE page, you will configure a User-Driven deployment mode.
- 5. Configure recommended settings, as shown in the following table.

Policy	Recommended setting
Deployment mode	User-Driven
Join to Azure AD	Azure AD joined
Microsoft SW License Terms and Privacy settings	Hide. These settings will not be shown to end users.
User account type	Standard. This limits end users to standard privileges on the computer and prevents them from becoming local admins on the device.
Allow White Glove OOBE	No . This scenario does not use the White Glove OOBE option which allows you to pre-provision the device to speed up the OOBE experience.

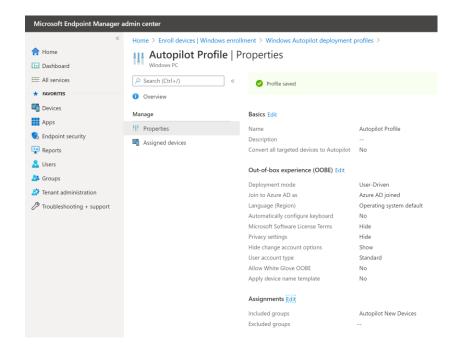
Keep Language as OS default	This is the OS language. Also leave the keyboard to auto
	config based on the region selection.
Apply device name	No



6. Select **Next** and assign this profile to the dynamic group **Autopilot New Devices** you created earlier:



- 7. Choose Select and Next.
- 8. On the Review + Create page, check your settings, and then select Create.



Intune device configuration

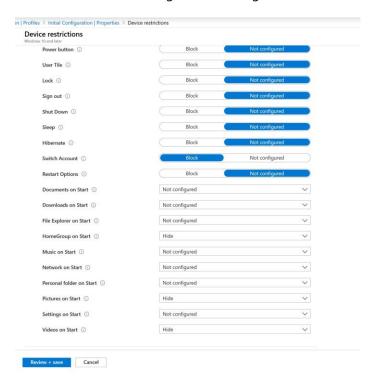
Device profiles

A device profile allows you to add and configure settings that can then be deployed to enrolled devices across your organization. When devices receive the device profile, the features and settings are applied automatically. Examples of common device profiles include Email, Device restrictions, VPN, Wi-Fi, and Administrative templates. Microsoft Intune includes settings and features that you can enable or disable on different devices within your organization. These settings and features are managed using profiles.

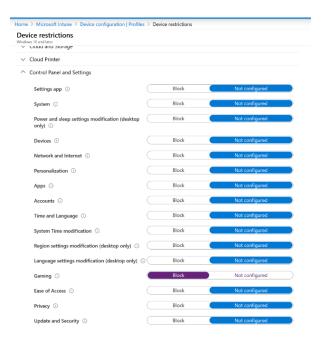
- Navigate to https://endpoint.microsoft.com > Devices > Configuration profiles and select +Create profile.
- 2. For the Platform choose Windows 10 and later.
- 3. Under Profile type choose Device restrictions.
- 4. On the Basics page, name the profile Win10-DeviceConfig-Restrictions and select Next.

TIP: If you are using the CDX pre-populated system you can also simply review and edit the existing profile and select Configuration settings.

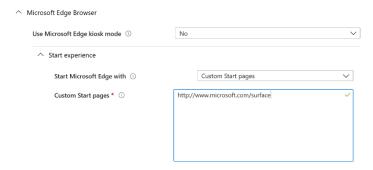
5. Review the available configuration settings and select **Start restrictions** and configure some settings.



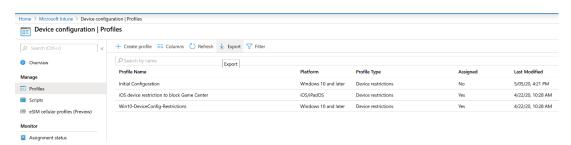
Open Control Panel and Settings and block Gaming.



7. Open **Microsoft Edge** and set the Start page to a favorite website.



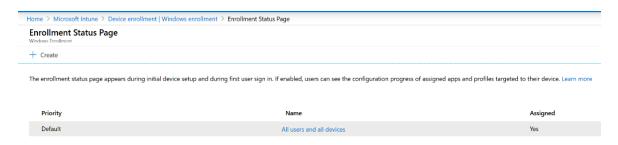
8. Select **Next** (twice), then under **Assignments** choose **All users and devices**, select **Next** (twice) and then select **Create** after you have reviewed the settings. Your profile Initial Configuration will be displayed on your list of profiles:



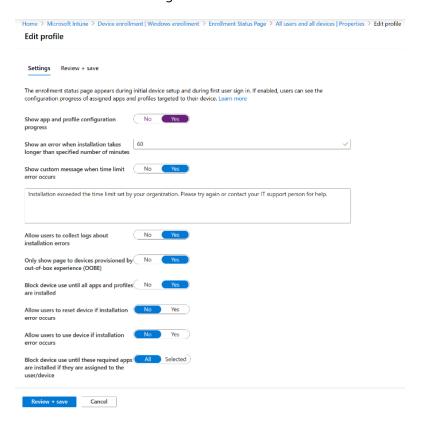
Enable the enrollment status page

You can configure an enrollment status page to appear during the initial device setup and first user sign-in, allowing users to see the progress of assigned apps and profiles targeted to their device.

Navigate to https://endpoint.microsoft.com > Device > Enroll Devices > Windows Enrollment>
 Enrollment Status Page. On the default ESP page, All users and all devices, you can edit and adjust the properties:



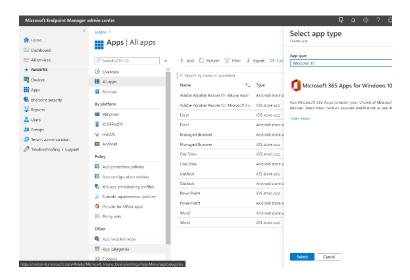
Select Settings Edit and select Yes to Show app and profile installation progress and retain the default values for the other settings.



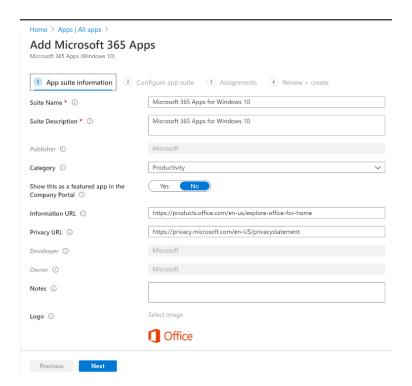
3. Select Review + Save to store the settings. This Default ESP is then assigned to all users and devices.

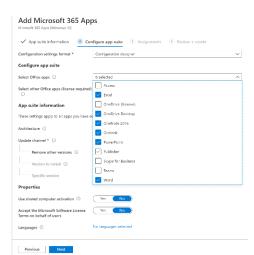
Deploy software - Microsoft 365 Apps

- Open <u>Endpoint Manager</u> (https://endpoint.microsoft.com) and navigate to **Apps** > **All Apps** and click select +**Add**.
- 2. In the Select app type pane, choose Microsoft 365 Apps for Windows 10, and choose Select.



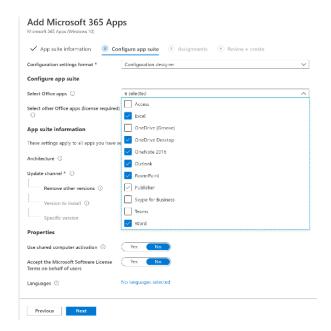
3. In the Add Microsoft 365 Apps pane, select Next on the App Suite information screen:





4. On the Configure app suite, choose **Select Office apps**, and make your choice:

- 5. Leave the architecture as **64-bit** and ensure the Update Channel is **Semi-Annual Enterprise Channel**.
- 6. Select Yes to Accept the License Agreement on behalf of the users.
- 7. Retain defaults for all other settings and then select Next.



8. On the Assignment Page, select +Add all users.

Add Microsoft 365 Apps App suite information Microsoft 365 Apps for Windows 10 Microsoft 365 Apps for Windows 10 Microsoft Publisher Category Productivity Show this as a featured app in the No Information URL https://products.affice.com/en-us/explore-affice-for-home Privacy URL https://privacv.microsoft.com/en-US/privacvstatement Developer Microsoft Office Configure app suite Architecture Version to install Latest Use shared computer activation Accept the Microsoft Software License Yes Terms on behalf of users Apps to be installed as part of the suite No languages selected

9. Select **Next**, review your settings, and then select **Create**.

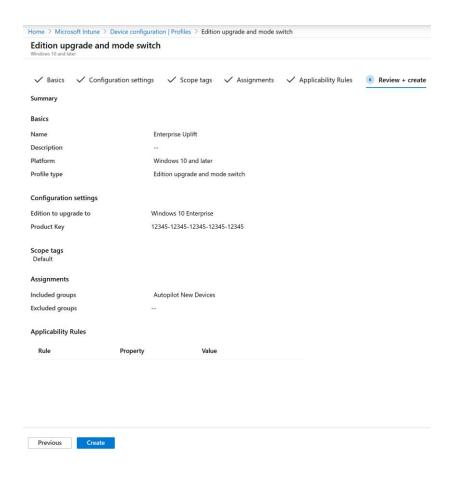
Optional: Windows 10 Edition upgrade

Available for enrolled devices

Previous Create

As part of the automated provisioning process, you can choose to upgrade the factory installed operating systems from Windows 10 Pro to Windows 10 Enterprise. For users with M365 E3 or E5 licenses, upgrading occurs automatically when the user (with the license assigned) logs in for the first time. For others, you will need to create a new profile and assign it to all users.

- 1. Open Intune and navigate to **Device configuration > Profiles > Create profile**.
- 2. For Platform, select Windows 10 and later. For profile, select Edition upgrade and mode switch.
- 3. Select Create and then name the new profile Enterprise Uplift.
- 4. Under the Configuration Settings pane, select **Windows 10 Enterprise** and fill in the required Product Key information.
- 5. Select Next > Next > and assign the profile to your Autopilot New Devices Group.
- 6. Select Next to review the settings and then select Create.



- 7. On the Assignments page, select under **Required** on **+Add all users**. M365 apps are assigned to all users.
- 8. Select Next and then select Create.

This completes the basic configuration of the customer tenant.

Register Devices via Microsoft Partner Center

Before you can apply an Autopilot profile to a device, you will need to first add any new devices that are not already enrolled in Azure AD or your MDM solution.

To register devices using MPC, submit a .csv file that contains specific information about the devices. as shown below. Note that this .csv includes all possible fields, including the hardware hash of the device. Ideally you would only need to fill out the *Windows product ID (PKID)* column.

```
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window?

| Company of the Company of t
```

If the product ID is not known to you, then for Surface devices you can simply use a convenient alternative method. Fill out a tuple for each device with these 3 items:

- Serial Number,
- Manufacturer Name
- Device Model

```
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window?

| Comparison of the Comparison of the
```

TIP: This registration step can already occur early in the device procurement process, sometimes as early as devices arrive at the partner location and often before the order is assembled for shipping to the customer.

It is recommended to establish practices to allocate and isolate Windows Autopilot orders, allowing the collection of the product ID (PKID) and/or serial numbers before their registration and enrollment in Windows Autopilot.

Format of .csv registration file

The .csv file must contain the following elements to register devices:

- First line is always the header -- line, comma separated: Hardware Hash, Manufacturer Name, Device Model
- Device Serial Number obtained from the sticker on the box or from the ordering or purchasing process, for example on the invoice or shipping label.
- Windows Product ID for new Surface devices, this is obtained from the sticker on the box; for the future this is the preferred option for Surface and OEM devices.
- Hardware Hash optional for Surface not needed for the partner center registration.

- Manufacturer Name for Surface devices this would-be Microsoft Corporation.
- Device Model For Surface device model names, see Surface System SKU reference. Or you can run MSInfo32.

Also make sure that each device line ends with a comma and that you have 5 commas per line.

Example:

```
| 1 Device serial number, Windows product ID, Hardware hash, Manufacturer name, Device model 2 017531493657, , , Microsoft Corporation, Surface Laptop 3, 3
```

Language dependencies

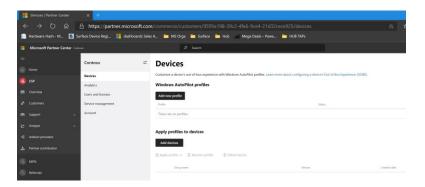
IMPORTANT: For international partners, be aware that the header of the .csv file is UI language dependent. We recommend that you use Notepad to view and edit the .csv file. If you want to use Excel for the .csv file creation, then please make sure that your columns are properly formatted (you need to use a 12-digit number).

To register devices using a .csv file:

- 1. Sign in to MPC.
- 2. Open your customer account from the Customers tab.



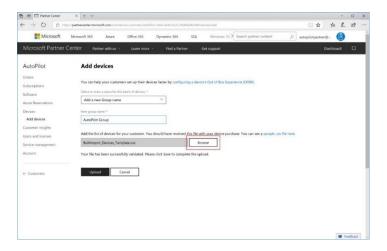
3. Under Devices, select Add devices.



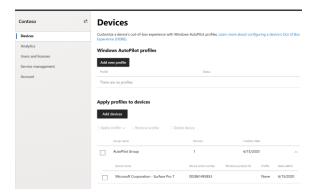
NOTE: Skip the Windows Autopilot profiles option in favor of configuring profiles in the customer's MDM system, which is the appropriate location to manage policies, app deployment, and so on.

4. Name the batch of devices that you are adding or select from an existing group.

5. Select Browse to locate the .csv file containing the list of device serial numbers to be added. Select Open to select the .csv file.



- 6. Select **Upload** to upload the .csv file and register the devices. It may take some time for the devices to be validated and registered to the account. provide up to 30 minutes for this process to complete and for devices to appear in the list of registered devices under the account.
- 7. Once the file is uploaded you will see the device in your customers devices list.



When naming device groups during registration, you can assign names based on the convention or groups that best suit your scenario. For example, the group name can be used to record each invoice as those devices are registered, the PO on which the devices were ordered, or a name for a larger initiative. For example, if the deployment is a refresh of devices in the accounting department and will include small batches fulfilled intermittently over an extended period, for example over the summer, the group name could be Accounting Summer Refresh. If you encounter errors uploading your .csv file, the Partner Center will produce an "errors .csv file" that you can analyze to determine the cause of failure, often due to formatting or missing data.

NOTE: Devices that are registered by the partner in the Partner Center will be visible to the customer in AAD, Intune, and Microsoft Store for Business. A partner can de-register these devices using the Partner Center and is so able to offer new automated services around this (like break-and-fix services).

Devices that are registered by the customer, for example through Microsoft Store for Business, do not appear in Partner Center and cannot be configured through the Partner Center for Autopilot. Consequently, a partner has no control over these devices and cannot offer new automated services offers for these devices.

Optional: Remove a device from Windows Autopilot Enrollment

If Windows Autopilot deployment is no longer desired for a device, you can remove the Autopilot profile assigned via the Partner Center:

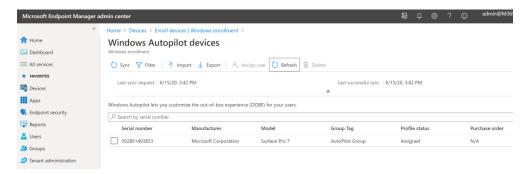
- 1. Open your customer account in the Partner Center from the **Customers** tab.
- 2. From Devices, in the **Assign and delete devices** pane, select the devices that you want to configure. To select an entire batch, select the checkbox next to the batch name.
- 3. Select **Remove profile**. The devices will then show the Autopilot profile name of **None** in the Profile column. If the device is no longer owned by the customer organization, the device or batch can be deleted from the customer with the Delete option.

Check device registration status in Intune

- 1. Go back to the PoC Tenant at https://endpoint.microsoft.com > Devices > Enrolled Devices > Devices
- 2. Select Sync and Refresh.

The device that you have just registered in the Partner Center should now appear in the list. Also note the Group Tag that was chosen in the Partner Center. Check the profile status, which should appear in the beginning at **Not** assigned. The device will be added to the dynamic devices group **New Autopilot Devices** that you created earlier. The Autopilot profile will then be assigned to devices in this group.

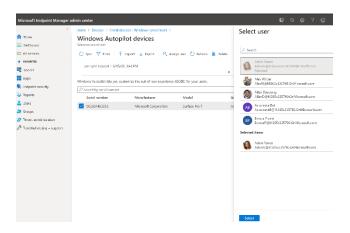
This is the reason you get a profile Status that first shows **Updating** and finally **Assigned**. This can take a little while, and while you are waiting for this to happen, go to the next step.



Assign the device to a user

You can assign a specific user to a device. This can be helpful in creating a customized experience for your users as well as removing the need for them to input their corporate username (as it is captured automatically during the setup process). This capability can be initiated once the device is registered to your tenant as part of the Windows Autopilot service.

Go to https://endpoint.microsoft.com > Devices > Enroll devices > Devices and select the device you wish to assign to a specific user.



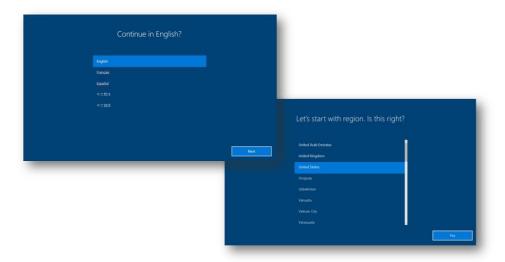
- 2. Select the device and then select **Assign user**. Choose our target end user in the user list. Example: AdeleV.
- 3. Check the properties and then select Save.



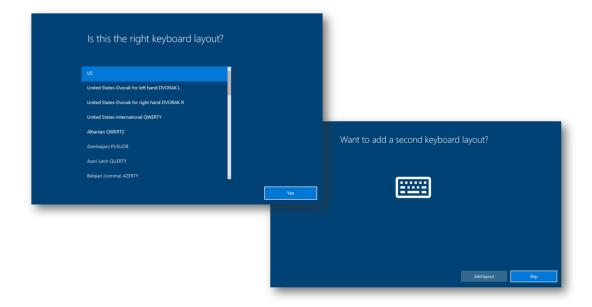
End-user experience - Autopilot with Surface (User-Driven)

Not only does Windows Autopilot with Surface make life easier for IT, but your users also benefit from the automation and simplicity. When using the device for the first time, users will experience the Windows Out-of-box experience (OOBE). With Autopilot the OOBE experience has been greatly simplified with the number of screens the user has to go through reduced by 75% from the traditional OOBE experience. In fact, users only need their work account credentials. No local admin permissions are required.

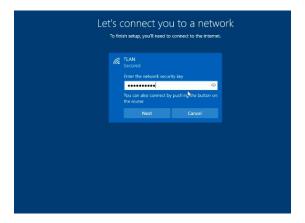
1. When the Windows 10 device is turned on for the first time, this user is asked to identify their language and region.



2. Next, user selects keyboard layout and is given the option for second keyboard layout.



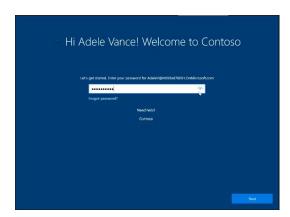
3. Next, Windows will verify network connectivity to the internet. If connecting via a Wi-Fi connection, the user will be prompted to connect to a wireless network. If the Surface device is connected via an ethernet cable, Windows will skip this step.



4. Once connected, Windows will look for, and apply, any required updates.



5. Once completed, the user will be presented with a corporate branded welcome screen. Here they will be prompted to log in with their corporate username and password.



6. After logging in, Windows will finish setting up the device.

NOTE: The provisioning process takes a little time to complete, though it could be longer depending on the number of applications, policies, etc. that are being deployed as part of the Autopilot process. Once complete, the device is ready for productive use.

DFCI - Intune management of Surface UEFI settings

With Device Firmware Configuration Interface (DFCI) profiles built into Microsoft Intune, Surface UEFI management extends the modern management stack down to the UEFI hardware level. DFCI on Surface devices¹ supports zero-touch provisioning, eliminates BIOS passwords, provides control of security settings including boot options and built-in peripherals, and lays the groundwork for advanced security scenarios in the future. In contrast to other Windows 10 devices available in the market today, Microsoft Surface provides IT admins with the ability to configure and manage firmware through a rich set of UEFI configuration settings. This provides a layer of hardware control on top of software-based policy management as implemented via mobile device management (MDM) policies. Example: organizations deploying devices in highly secure areas with sensitive information can prevent camera use by removing functionality at the hardware level. From a device standpoint, turning the camera off via a firmware setting is equivalent to physically removing the camera. Compare the added security of managing at the firmware level to relying only on operating system software settings. For example, if you disable the Windows audio service via a policy setting in a domain environment, a local admin could still re-enable the service.

Now with newly integrated UEFI firmware management capabilities in Microsoft Intune, the ability to lock down hardware is simplified and easier to use with new features for provisioning, security, and streamlined updating all in a single console, now unified as Microsoft Endpoint Manager.

DFCI enables zero touch management, eliminating the need for manual interaction by IT admins. DFCI is deployed via Windows Autopilot using the device profiles capability in Intune. DFCI is simply an additional device profile that enables you to manage UEFI configuration settings from the cloud without having to maintain on-premises infrastructure.

Supported devices

DFCI is supported on the following devices:

- Surface Pro 7+
- Surface Pro 7
- Surface Pro X

^{1.} Surface Go and Surface Go 2 use a third-party UEFI and do not support DFCI. Find out more about managing Surface UEFI settings at https://docs.microsoft.com/surface/manage-surface-uefi-settings.

- Surface Laptop 4
- Surface Laptop 3
- Surface Book 3
- Surface Laptop Go

Prerequisites

- Register devices to Windows Autopilot by a CSP or Microsoft. It is not possible to self-register via Intune.
- Fulfill the Autopilot requirements, as indicated earlier in this document.
- Add your target Surface devices to an Azure AD security group (Example: 000AllDFCldevices).

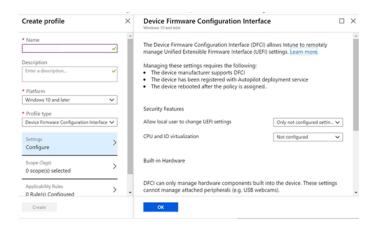
Configure DFCI management for Surface devices

A DFCI environment requires setting up a DFCI profile that contains the settings and an Autopilot profile to apply the settings to registered devices. An enrollment status profile is also recommended to ensure settings are pushed down during OOBE setup when users first start the device. This guide explains how to configure the DFCI environment and manage UEFI configuration settings for targeted Surface devices.

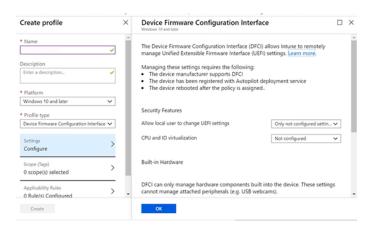
Create DFCI profile

Before configuring DFCI policy settings, first create a DFCI profile and assign it to the Azure AD security group that contains your target devices.

- 1. Sign in to your tenant at https://endpoint.microsoft.com
- In the Microsoft Endpoint Manager Admin Center, select Devices > Configuration profiles > Create
 profile and enter a name; for example, DFCI Configuration Policy.
- 3. Select Windows 10 and later for platform type.
- 4. In the Profile type drop-down list, select **Device Firmware Configuration Interface** to open the DFCI blade containing all available policy settings. You can configure DFCI settings during the initial setup process or later by editing the DFCI profile.



- 5. Select **OK** and then select **Create**.
- 6. Select **Assignments** and under **Select groups to include** select the Azure AD security group that contains your target devices, as shown in the following figure. Select **Save**.

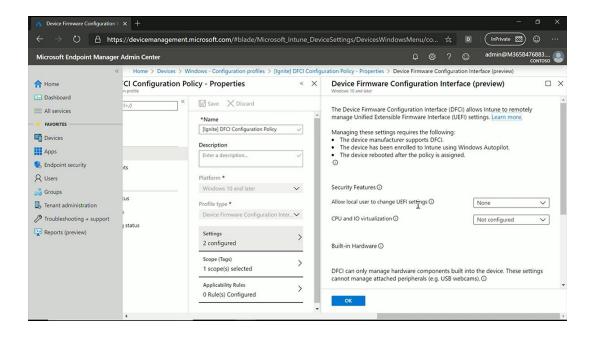


- 7. Next make sure that you assign the Autopilot profile to your DFCI devices group.
 - In Endpoint Manager select Devices > Windows enrollment and scroll down to Deployment profiles.
 - Select the Autopilot profile you created in the preceding section, and under the Assignments page, choose Select groups to include and select your Azure AD security group (Example 00AIIDFCIdevices).
 - Select Next and save the settings.

Configure DFCI settings on Surface devices

DFCI includes a streamlined set of UEFI configuration policies that provide an extra level of security by locking down devices at the hardware level. DFCI is designed to be used in conjunction with mobile device management settings at the software level. Note that DFCI settings only affect hardware components built into Surface devices and do not extend to attached peripherals such as USB webcams. (However, you can use Device restriction policies in Intune to turn off access to attached peripherals at the software level). You configure DFCI policy settings by editing the DFCI profile from Endpoint Manager, as shown in the figure below.

 In <u>Endpoint Manager</u> select <u>Devices</u> > <u>Windows</u> > <u>Configuration Profiles</u> > <u>DFCI profile name</u> > <u>Properties</u> > <u>Settings</u>.



Block user access to UEFI settings

For many customers, the ability to block users from changing UEFI settings is critically important and a primary reason to use DFCI. As listed in Table 1, this is managed via the setting Allow local user to change UEFI settings. If you do not edit or configure this setting, local users will be able to change any UEFI setting not managed by Intune. Therefore, it is highly recommended to disable Allow local user to change UEFI settings. The rest of the DFCI settings enable you to turn off functionality that would otherwise be available to users. For example, if you need to protect sensitive information in highly secure areas, you can disable the camera, and if you do not want users booting from USB drives, you can disable that also.

Device management goal	Configuration steps
Block local users from changing UEFI settings	Under Security Features > Allow local user to change UEFI settings, select None.
Disable cameras	Under Built in Hardware > Cameras, select Disabled.
Disable Microphones and speakers	Under Built in Hardware > Microphones and speakers, select Disabled.
Disable radios (Bluetooth, Wi-Fi)	Under Built in Hardware > Radios (Bluetooth, Wi-Fi, etc), select Disabled.

Device management goal	Configuration steps
Disable Boot from external media (USB, SD)	Under Built in Hardware > Boot Options > Boot from external media (USB, SD), select Disabled.

CAUTION: The Disable radios (Bluetooth, Wi-Fi) setting should only be used on devices that have a wired Ethernet connection.

NOTE: DFCI in Intune includes settings that do not currently apply to Surface devices: (1) CPU and IO virtualization (2) Disable Boot from network adapters.

Manually Sync Autopilot devices

Although Intune policy settings typically get applied almost immediately, there may be a delay of 10 minutes before the settings take effect on targeted devices. In rare circumstances, delays of up to eight hours are possible. To ensure settings apply as soon as possible (such as in test scenarios), you can manually sync the target devices.

In <u>Endpoint Manager</u>, go to <u>Devices > Device enrollment > Windows enrollment > Windows Autopilot Devices and select Sync.
</u>

NOTE: When adjusting settings directly in UEFI, you need to ensure the device fully restarts to the standard Windows login.

Verify UEFI settings on DFCI-managed devices

In your test environment, you can verify settings in the Surface UEFI interface.

- 1. After a reboot, boot into Surface UEFI, by pressing the Volume+ and Power buttons at the same time.
- 2. Select Devices. The UEFI menu will reflect configured settings, as shown in the following figure.
- 3. As you can see, the settings are grayed out because in Intune we did set Allow local user to change UEFI setting to None. Audio is set to off because Microphones and speakers are set to Disabled.

Remove DFCI management

To remove DFCI management and return device to factory new state:

- 1. Retire the device from Intune: In <u>Endpoint Manager</u>, choose **Groups > All Devices**. Select the devices you want to retire, and then choose **Retire/Wipe**.
- Delete the Autopilot registration from Intune: Select Device enrollment > Windows enrollment >
 Devices. Under Windows Autopilot devices, choose the devices you want to delete, and then choose
 Delete.

- 3. Connect device to wired internet with a Surface-branded ethernet adapter (USB-A or USB-C or Surface Dock)
- Restart device and open the UEFI menu (press and hold the volume-up button while also pressing and releasing the power button). Select Management > Configure > Refresh from Network and then choose Opt-out.

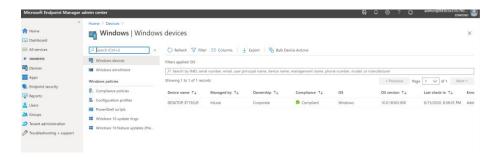
TIP: To keep managing the device with Intune, but without DFCI management, self-register the device to Autopilot and enroll it to Intune. DFCI will not be applied to self-registered devices.

Optional: Reset the device and de-register the device from Autopilot

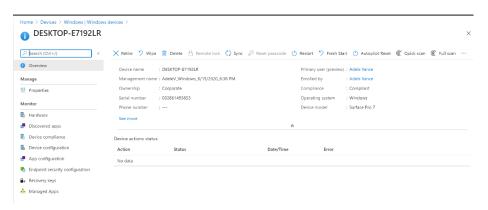
A normal end of life scenario for a device would be to a) factory reset the device and then b) delete its Windows Autopilot registration.

Reset the device to OOBE

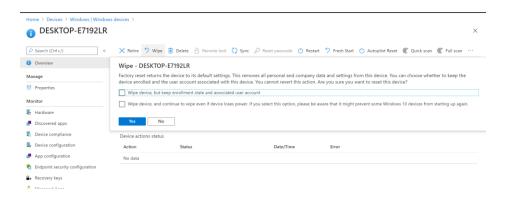
 If you go back to the <u>Endpoint manager</u> > <u>Devices</u> > <u>Windows devices</u> you can also see all enrolled devices.



2. Select the device that you want to reset and select it on the next screen select Wipe.



3. If you select **Yes**, the device will be reset to its factory defaults and the Intune object will be deleted as well.



De-register the device from Windows Autopilot

There are two options to de-register the device from Autopilot:

- Customer can de-register it using the Endpoint Manager UI.
- CSP partner who registered the device can de-register the device in MPC.

Customer de-registers device using Endpoint Manager

1. Go to https://endpoint.microsoft.com > Devices > Enroll devices > Windows enrollment.

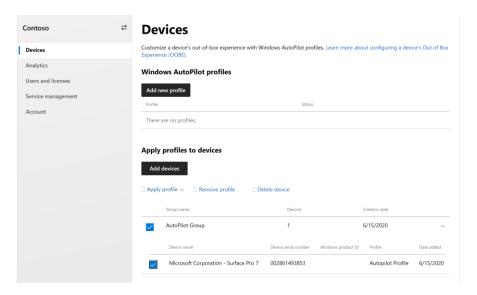


2. Select the device in the list and select **Delete** to delete it from Autopilot

Partner de-registers device using Microsoft Partner Center

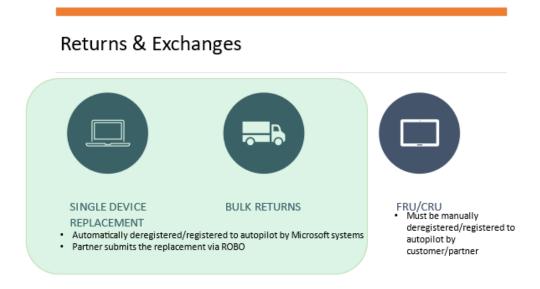
If the device was registered by a CSP, this CSP partner can de-register the device as follows:

- 1. Sign in to the Microsoft Partner Center.
- 2. Go to Customers and choose the appropriate customer from the customer list.
- 3. Find under **Devices** the target device (check the serial number).
- 4. Check the box.
- 5. Select Delete device. This deletes the device from Autopilot and may take a few minutes.



Return and exchange scenarios

Depending on the return scenario, the partner may or may not play a role in deregistration of the broken device and registration of the new replacement device. There are additional steps that may need to be taken by the customer or partner for returns and exchanges.



In most returns and exchange scenarios, Microsoft will automatically deregister the returned device and register the replacement device. The partner only needs to make sure the request is submitted to Microsoft via ROBO tool. In the case of Field or Customer Replaceable Units (FRU/CRU), follow the additional steps below.

Prepare the device for repair

Step 1: Remove the device from Autopilot and DFCI

Regardless of whether a commercial device is returning to the same customer or being sent back to Microsoft, it is important to have the customer retire the device and delete it from their tenant before submitting it for repair.

Device retirement and deletion

- 1. Sign-in to the Microsoft Endpoint Manager admin center.
- 2. In the **Devices** pane, select **All Devices**.
- 3. Select the name of the device that you want to retire.
- 4. In the pane that shows the device name, select Retire. To confirm, select Yes.
- 5. In the **Devices** pane, select the name of the device you just retired and select **Delete** to remove it from the tenant.
- In <u>Endpoint Manager</u>, go to <u>Devices</u> > <u>Devices</u> = <u>Note of the Control of the Co</u>
- 7. Wait 15 minutes before moving forward with any additional work on the device.

Step 2: Reset UEFI to enable boot from USB to re-image

Access to the UEFI boot screen is required for successful repair processing of Surface devices. This section describes security states of the UEFI screen along with relevant procedures.

UEFI password prompt

If the UEFI screen prompts for a password:

- 1. Attempt to obtain the UEFI password from the customer.
- 2. If unable to obtain the password, the device is not eligible for ASP repair and should be returned to Microsoft for servicing.

Unable to change settings or settings revert in UEFI

If you are unable to change settings in UEFI or the settings you changed revert to prior values on reboot, the customer may have enabled a DFCI policy on the device in their Intune tenant.

To remove DFCI policy from the device:

- 1. Retire the device from the Intune and delete it from the tenant.
- 2. Wait 10 minutes before moving forward with any additional work on the device.
- 3. Connect the device to wired internet with a Surface-branded ethernet adapter.
- 4. Restart the device and open the UEFI menu (press and hold the volume-up button while also pressing and releasing the power button).
- 5. Select Management > Configure > Refresh from Network and then choose Opt-Out.
 - a. If you receive a Success message you are good to continue to step 6.
 - b. If you receive a State 0 error code please, try again after an hour. This state can require multiple attempts.
 - c. If you receive a State 3 error code too much time has elapsed between step 1 and this step. wait 24 hours before taking this step again.
- 6. Once the process is complete, ensure that changes to UEFI remain.
- 7. Once UEFI changes are confirmed, continue with repair operations.

NOTE: If you are unable to remove the DFCI policy or UEFI settings continue to not be accessible, the device must be returned to Microsoft for servicing.

Step 3: Enroll device into Autopilot and DFCI to restore previous state

The device sent back to the customer will need to be re-enrolled into their tenant to gain the benefits of Autopilot and DFCI policy. Procedures vary depending on how the customer's devices were originally enrolled.

- Microsoft Partner via Partner Center (preferred method) the customer's contracted Microsoft Partner can
 use the following documentation to learn more: <u>Customize a device's out-of-box experience Partner
 Center | Microsoft Docs</u>
- If the customer does not have a Microsoft Partner, and wishes for Microsoft to handle the device registration, they can begin the process at this link: <u>Surface Registration Support for Windows Autopilot - Surface | Microsoft Docs</u>

Appendix

Optional: Instructions to use PowerShell Script for generating the HW hash

If the PoC is only with a few devices, then the .csv for each device can be generated with a simple PS1 script.

Ensuring that the devices filling your customers' orders meet this requirement is the responsibility of the partner.

When devices are used to fill your customers' orders that do not meet this requirement, harvesting of the hardware hash from each device is required.

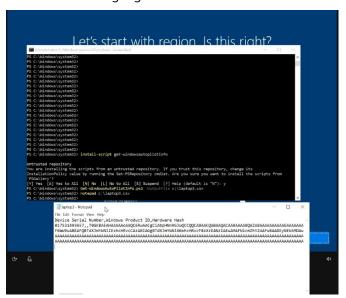
- 1. Connect the device to a Network (Wired via USB-LAN Adapter or Wi-Fi)
- 2. Boot the device into Windows 10.
- 3. On the first OOBE screen, press *Shift-F10* to open a command prompt.

WI-FI only: On the first OOBE screen, press Shift-F10 to open a command prompt.

-Enter start **ms-availablenetworks** to show the Wi-Fi fly-out pane where you can connect to your wireless network.

4. At the command prompt:

- Check the network connectivity with a ping command.
- Run PowerShell.exe. Run command Set-ExecutionPolicy Bypass to enable scripts.
- Then run command Install-Script Get-WindowsAutopilotInfo and answer Y to any prompts.
- Execute command Get-WindowsAutopilotInfo.ps1 -OutputFile c:\POC.csv
- Copy the .csv file to a USB key and exit from PowerShell.exe and the command prompt to remain at the OOBE language selection screen.



NOTE: Do not open the .csv file in Excel as reformatting of the information can occur and corrupt the file. Instead use Notepad to open the .csv. Once you have a .csv file with the device details, you will be able to add the devices into the Autopilot Deployment Service via Intune.

If you plan to import devices from which you are harvesting the hardware hash via Get- WindowsAutopilotInfo via the Partner Center, use the -Partner switch to generate a .csv with the appropriate fields.

- For a project with many devices, the PS1 script is too time consuming, as you must manually touch each device.
- Microsoft Supply Chain Support team can be involved to provide a bulk-upload-ready .csv list of HW hashes in Intune.
- Work with your PMM here. You must send a list of the Surface device serial numbers to Microsoft with a Proof of Purchase (PO or Invoice). Microsoft with then return the Hardware Hash list in a .csv format that can be used to upload by the partner or customer.

Optional: Create and manage Autopilot profiles in MPC

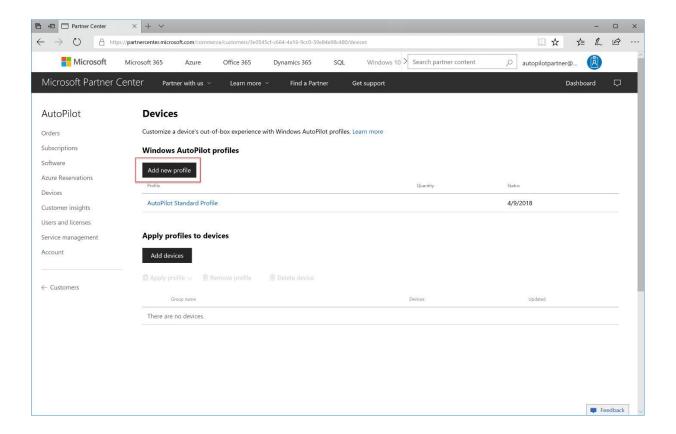
An *Autopilot profile* is a collection of settings used to configure a device during a Windows Autopilot deployment. This Autopilot profile can be created by the organization where devices are being deployed, or in a limited way by the partner on behalf of their customers. It contains the tenant information for joining an organizations' AAD environment, which is automatically populated when you add devices to a customer through the Partner Center, as well as settings for automating OOBE. A list of available settings for Autopilot profiles is available at

• Overview of Windows Autopilot.

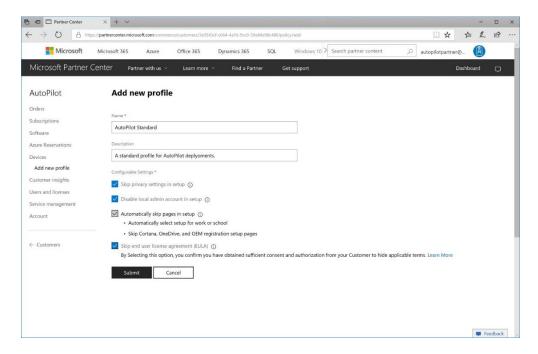
Note that the Autopilot profile allows automation of most aspects of OOBE but does not automate or suppress the pages for specifying your language and keyboard, or for connecting to Wi-Fi. The user must first proceed through these settings to join the device to a network to provide connectivity to the Autopilot service. Prompts to configure Windows Hello and PIN that occur after OOBE are also still presented to the user.

To configure settings as a partner on behalf of your customer from MPC

- 1. Open your customer account in the Partner Center from the Customers tab.
- 2. From **Devices**, select **Add new profile**.



3. Name the profile. for example, Autopilot Standard Profile as shown in the example.



4. Configure the OOBE settings. For example, check Skip privacy settings in setup to disable the telemetry and privacy settings page in OOBE. Note that the checkbox for Automatically skip pages in setup is checked by default for all Windows Autopilot deployments.

5. Select **Submit** to save the profile.

NOTE: Autopilot profiles created in the Partner Center will be visible to the customer in the Microsoft Store for Business and Microsoft Intune, however profiles created by the customer in the Microsoft Store for Business and Microsoft Intune will not be visible to the partner in Partner Center.

Optional: Apply an Autopilot profile to devices in MPC

- 1. Open your customer account in the Partner Center from the Customers tab.
- 2. From Devices, in the Assign and delete devices pane, select the devices that you want to configure. To select an entire batch, select the checkbox next to the batch name.
- 3. Select **Apply profile** and select the **Autopilot profile**. The devices will then show the Autopilot profile name in the Profile column.

After registering devices, creating a new profile, and applying that profile to devices it is recommended to test the configuration on a device to ensure OOBE is properly managed according to your Autopilot profile configuration.

Optional: Manage devices not supported for OEM enrollment

Support for enrollment in Windows Autopilot by serial number, device model, and manufacturer name is provided by the manufacturer of the device. Providing this support requires that the device manufacturer take steps during the manufacturing process to harvest the hardware hash value for each device. These values are then provided to the Windows Autopilot enrollment service and are matched with a device when that device is registered to fill in the missing hardware hash value.

This solution is the ideal scenario for Windows Autopilot enrollment as it results in a seamless experience where devices can be enrolled in Windows Autopilot without even needing to open the box before the user receives the device. There are, however, many devices for which this process will not be supported, including Surface devices that are manufactured with Windows 10 Version 1703 or earlier and devices from OEMs that have not yet enabled support for the enrollment by serial number, device model, and manufacturer name.

Order Specific Windows 10 OS Versions for Windows Autopilot customers

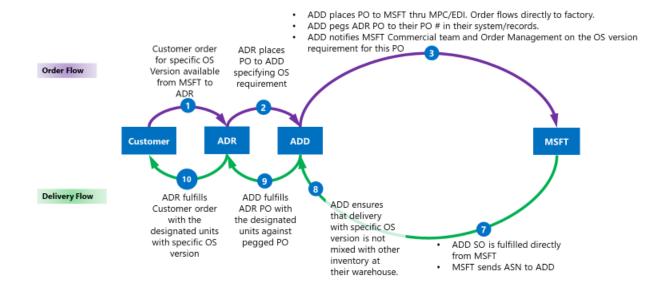
To ensure the ideal experience for customers who are ordering new devices and intending to deploy with Windows Autopilot, it is necessary that the customers' orders are filled with devices with the OS version the customers use in their environment.

There are two ways to get the right OS version on the device:

• If the offering is available from the ADR, ADRs or ADDs can re-image devices to exact OS version

• If the customer-requested OS version is what Microsoft ships directly, ADRs and ADDs can follow a pegged PO process to bypass the channel inventory and get devices directly from Microsoft (see Fig. 1). This process is done manually by the ADD pegging the ADR PO to their PO # in their system/records and notifying the MSFT commercial and Order management team on the OS version requirement. note that Surface devices come with different OS versions depending on the product and timeframe. While a Surface Pro 7 may ship from factory with Windows 10 1903, Surface Laptop 3 may ship with Windows 10 1909 in May 2020. As new OS versions are injected in the factory at different times, each product may have a different OS version at any given times. contact your Microsoft representative to find out the current OS versions shipping from Microsoft for each product. Support for pegging orders is a requirement for partners listed on the Windows Autopilot for Surface devices page.

Customer Ordering with ADD Pegged PO for Specific OS Version available from Microsoft



Resources

- Windows Autopilot and Surface devices | Microsoft Docs
- Surface Registration Support for Windows Autopilot | Microsoft Docs
- What is device management in Azure Active Directory?
- Windows Autopilot product site
- Overview of Windows Autopilot
- Windows 10 Subscription Activation
- Manage Windows device deployment with Windows Autopilot Deployment
- PowerShell scripts for Autopilot
- Automatically register existing device in Autopilot

Troubleshooting Autopilot

- Troubleshooting Windows Autopilot, a reference
- Troubleshooting Windows Autopilot Hybrid Azure AD Join

Additional capabilities

Here is a list and description of "a la carte" options for layering on additional capabilities and scenarios to the base POC.

Surface Diagnostic Toolkit (SDT) for Business

The Microsoft Surface Diagnostic Toolkit for Business enables IT administrators to quickly investigate, troubleshoot, and resolve hardware, software, and firmware issues with Surface devices. You can run a range of diagnostic tests and software repairs in addition to obtaining device health insights and guidance for resolving issues.

Windows Update for Business

Windows Update for Business enables information technology administrators to keep the Windows 10 devices in their organization always up to date with the latest security defenses and Windows features by directly connecting these systems to Windows Update service. You can use Group Policy or MDM solutions such as Intune to configure the Windows Update for Business settings that control how and when Windows 10 devices are updated. In addition, by using Intune, organizations can manage devices that are not joined to a domain at all or are joined to Microsoft Azure Active Directory alongside your on-premises domain-joined devices. Windows Update for Business leverages diagnostic data to provide reporting and insights into an organization's Windows 10 devices.