

# ExpertsLive Norway

## Windows Autopilot

Don't let the perfect be the enemy of the better

Ronni Pedersen

Cloud Architect @ APENTO

@RonniPedersen



Platinum Sponsor 2019





Ronni Pedersen  
Cloud Architect / Partner  
APENTO



Microsoft MVP: Enterprise Mobility  
Founder: System Center User Group Denmark  
Microsoft Certified Trainer

## Contact Me

Twitter: @ronnipedersen

Blog: <https://www.ronnipedersen.com/>

Website: <https://www.apento.com>

Mail: [rop@apento.com](mailto:rop@apento.com)

Phone: +45 2085 9452

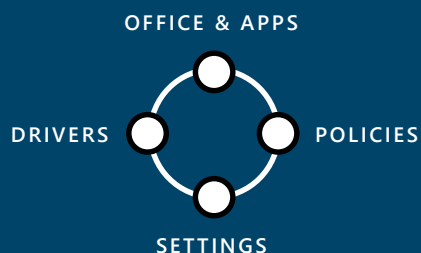


About me...

# Agenda

- Windows Autopilot Overview
- Registering devices
- Profiles
- Configuration
- Deployment Scenarios
  - User Driven Mode with Azure AD Join
  - Self-deploying Mode
  - User Driven Mode with Hybrid Azure AD Join
  - Windows Autopilot for Existing Devices
  - White Glove
- Roadmap

# Traditional Windows deployment



Build a custom image,  
gathering everything else  
that's necessary to deploy

+



Deploy image to a new  
computer, overwriting what  
was originally on it

=



Time means money, making  
this an expensive proposition

# Modern Windows deployment



Un-box and turn on  
off-the-shelf Windows PC



Transform with minimal  
user interaction

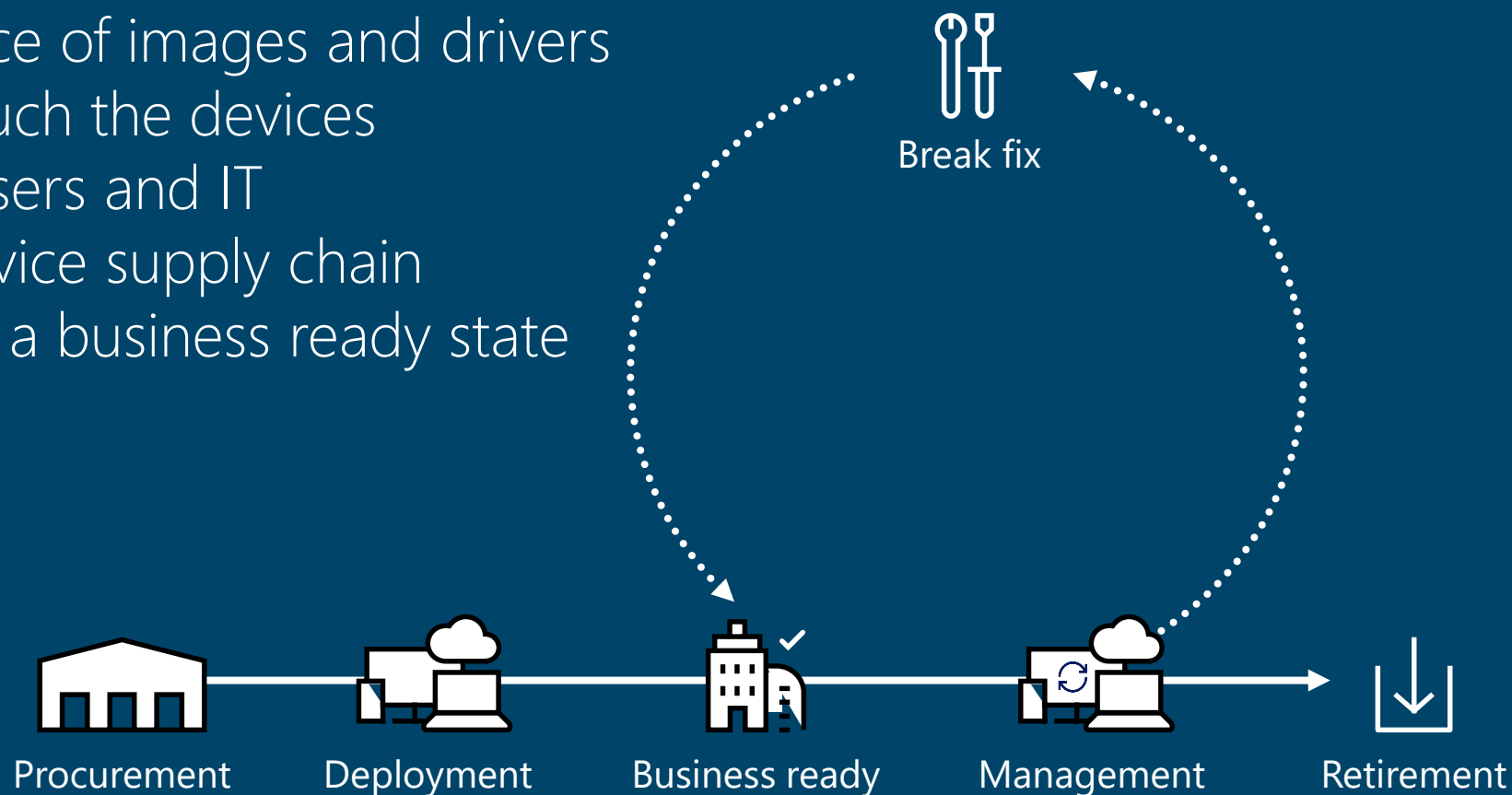


Device is ready  
for productive use

# Device lifecycle management

## Key Benefits

- No more maintenance of images and drivers
- No need for IT to touch the devices
- Simple process for users and IT
- Integration in the device supply chain
- Reset device back to a business ready state



# The Transformation



OEM-optimized Windows 10

+ Software

+ Settings

+ Updates

+ Features

+ User data

---


Ready for productive use



# DEMO

User-driven Deployment: End User Experience



A female delivery person wearing a blue cap and polo shirt is smiling and holding a cardboard box. She is also holding a clipboard in her left hand. The background is plain white.

Ronni, your new Surface Laptop has arrived.  
It's time for unboxing...



Let's start with region. Is this right?

United Arab Emirates

United Kingdom

Denmark

Uruguay

Uzbekistan

Vanuatu

Vatican City

Venezuela

Yes



Listening...



# Is this the right keyboard layout?

Danish (Denmark)

United States-Dvorak for left hand DVORAK L

United States-Dvorak for right hand DVORAK R

United States-International QWERTY

Albanian QWERTZ

Azerbaijani PUSUDB

Azeri Latin QUERTY

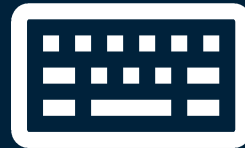
Belgian (comma) AZERTY

Yes





Want to add a second keyboard layout?



Add layout


Skip



Listening...




# Let's connect you to a network




APENTO Guest  
Open

☐ Connect automatically


Connect



APENTO  
Secured



Network 3  
Secured



Network 4  
Open

Skip for now



Network



http://captiveportalwi-fi/eula/1234.htm



## Welcome to APENTO GuestWi-Fi

Agree & Connect

By clicking on the connect button you agree to our [Terms of Service](#)  
and have reviewed the [APENTO Privacy Policy](#).











# Welcome to APENTO!

Enter your APENTO email



Need help?

Please sign in with your APENTO email address

[Change account](#)

[Privacy & Cookies](#)

[Terms of Use](#)

Next



Listening...





# Welcome to APENTO!

Enter your APENTO email



rop@apento.com

Need help?

Welcome to APENTO

[Change account](#)

[Privacy & Cookies](#)

[Terms of Use](#)

Next



Listening...





# Welcome to APENTO!

Enter your APENTO password



Need help?

Welcome to APENTO

[Change account](#)

[Privacy & Cookies](#)

[Terms of Use](#)

Next



Listening...



We're getting everything ready for you

Don't turn off your PC

This will just take a moment

Don't turn off your PC



# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)

Complete



**Device setup** [Show details](#)

Complete



**Account setup** [Show details](#)

Getting things ready...



# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Working on it...

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Complete

Almost there





Recycle Bin



M365  
Masterclass...



Microsoft  
Teams



Google  
Chrome



APENTO -  
Terms o...



APENTO -  
Terms o...



Join our  
team.png



Q4 Sales  
Report.xlsx



Q1 Report -  
Final.docx



# APENTO



# Windows Autopilot Deployment



## Three simple steps

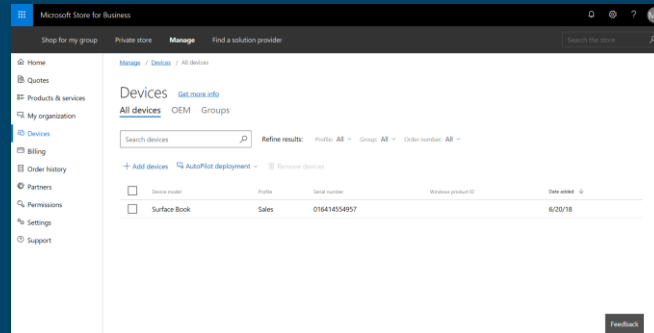
---

Register devices

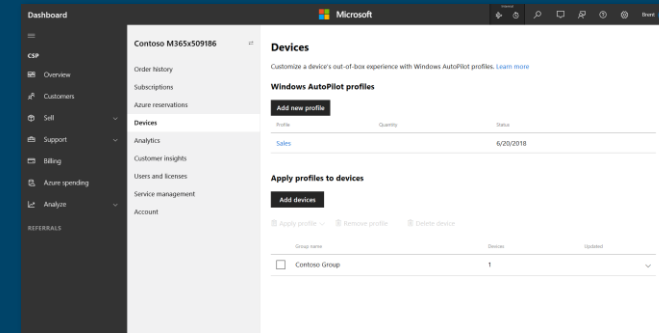
Assign an Autopilot profile  
to the devices

Ship the device to the user

# Administering Windows Autopilot

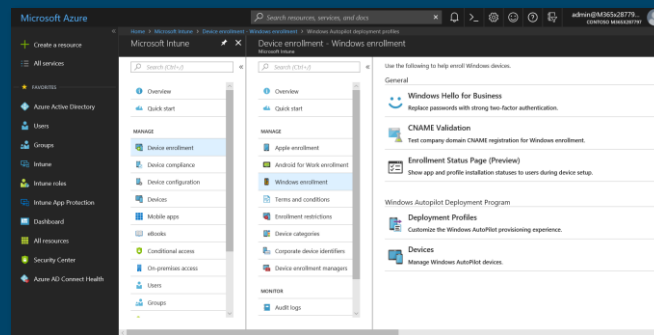


Microsoft Store for Business

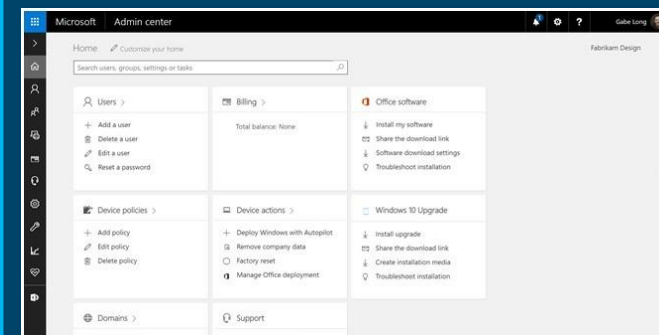


Partner Center

The only  
portal  
enterprises  
should use



Microsoft Intune



Microsoft 365 Business

# Windows Autopilot

Step 1. Registering devices



## Participant device manufacturers

These brands ship devices using Windows Autopilot. When you purchase from them, your employees will receive devices ready to go, just by signing in —requiring no help from IT.



DELL



HP



LENOVO



SURFACE



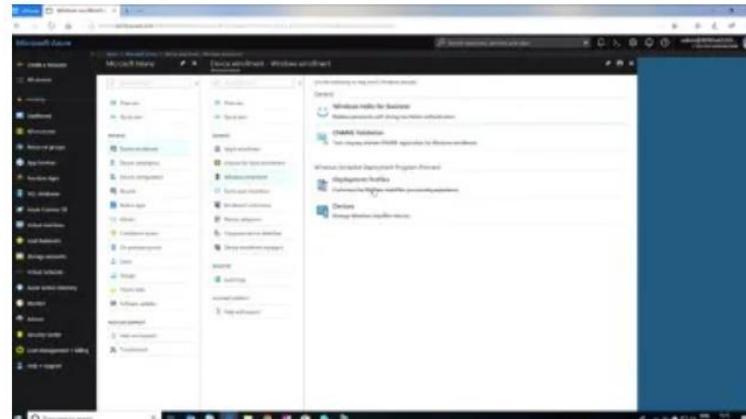
TOSHIBA

Device manufacturers coming soon

Panasonic

acer

## Additional Resources



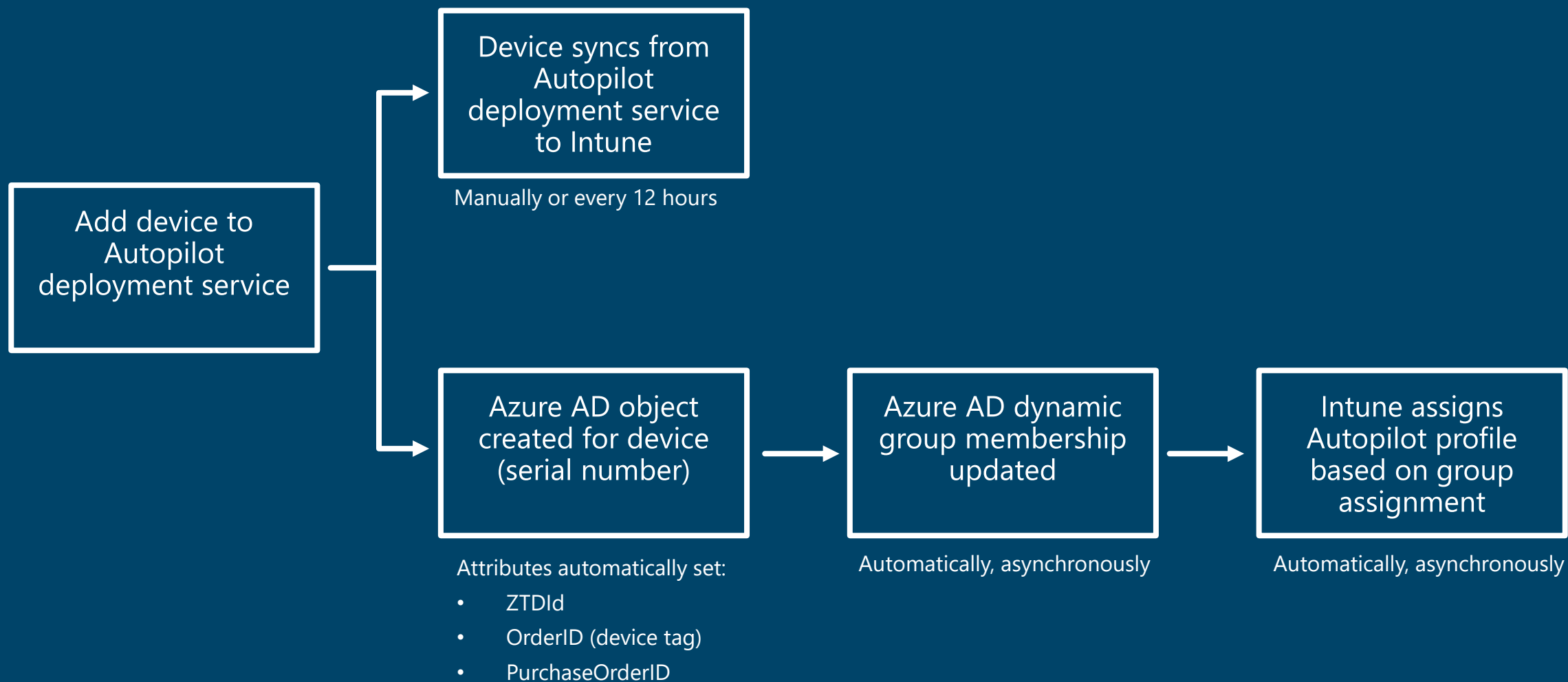
# Registering existing devices

Automatically for all Intune-managed Windows 10 devices

- If you have existing Windows 10 devices:
  - Enable new Autopilot profile setting for all targeted devices
  - Ensure the Autopilot profile is assigned to a group containing the existing Windows 10 devices
- If your existing Windows 10 devices are not yet Intune-managed:
  - Enable co-management with ConfigMgr via the “Automatic enrollment into Intune” setting.
  - Ensure all new Intune-enrolled Windows 10 devices are part of a group with an assigned Autopilot profile

# Registering devices

## Flow



# Windows Autopilot

## Step 2. Assign Profile

# Creating an Autopilot profile

## Configure important details:

- Deployment mode
- Specific settings required for the deployment mode
  - New! BitLocker encryption even for non-admin users (requires Windows 10 1809)
- Out-of-box experience (OOBE) settings
  - New! Hide change account options (requires Windows 10 1809)
- New! Device naming pattern, supporting variable substitution (requires Windows 10 1809):
  - %SERIAL%
  - %RAND:x% (where X is the number of digits)

The image shows two side-by-side windows from the Windows Autopilot configuration tool. The left window, titled 'Create profile', shows fields for 'Name' (with a placeholder 'Enter the name'), 'Description' (with a placeholder 'Optional'), 'Deployment mode' (set to 'User-Driven'), 'Join to Azure AD as' (set to 'Select directory service devices will join'), and 'Out-of-box experience (OOBE)' (set to 'Defaults configured'). The right window, titled 'Out-of-box experience (OOBE)', shows configuration options for the OOBE. It includes a list of automatically enabled options: 'Skip Work or Home usage selection', 'Skip OEM registration and OneDrive configuration', and 'Skip user authentication in OOBE'. Below this are toggle buttons for 'End user license agreement (EULA)' (set to 'Hide'), 'Privacy Settings' (set to 'Hide'), 'Hide change account options (Windows Insider only)' (set to 'Hide'), 'User account type' (set to 'Administrator'), and 'Apply computer name template (Windows Insider only)' (set to 'Yes'). At the bottom, there is a section for 'Create a unique name for your devices' with a text input field containing 'My Company-%RAND:4%'.

# Assigning an Autopilot profile

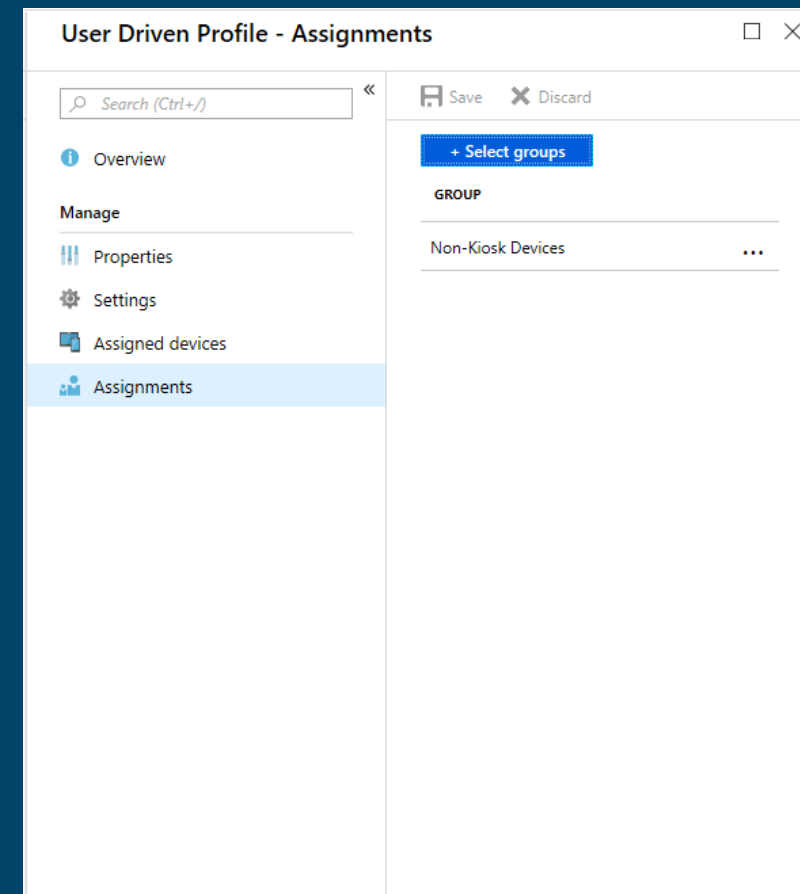
## Automated using groups

If you have existing Windows 10 devices:

- An Azure AD device object is automatically created for each imported Autopilot device
- Create one or more Azure AD groups
- Assign an Autopilot profile to the Azure AD group
- Intune will automatically assign the profile to all members of the assigned group

Options for grouping:

- Dynamic group with all Autopilot devices
- Dynamic group based on purchase order ID
- Dynamic group based on device tag (orderId)
- Manual





# DEMO

Creating dynamic AAD group with all Autopilot devices



# DEMO

Creating a group with all Autopilot devices  
with a specific Purchase Order ID





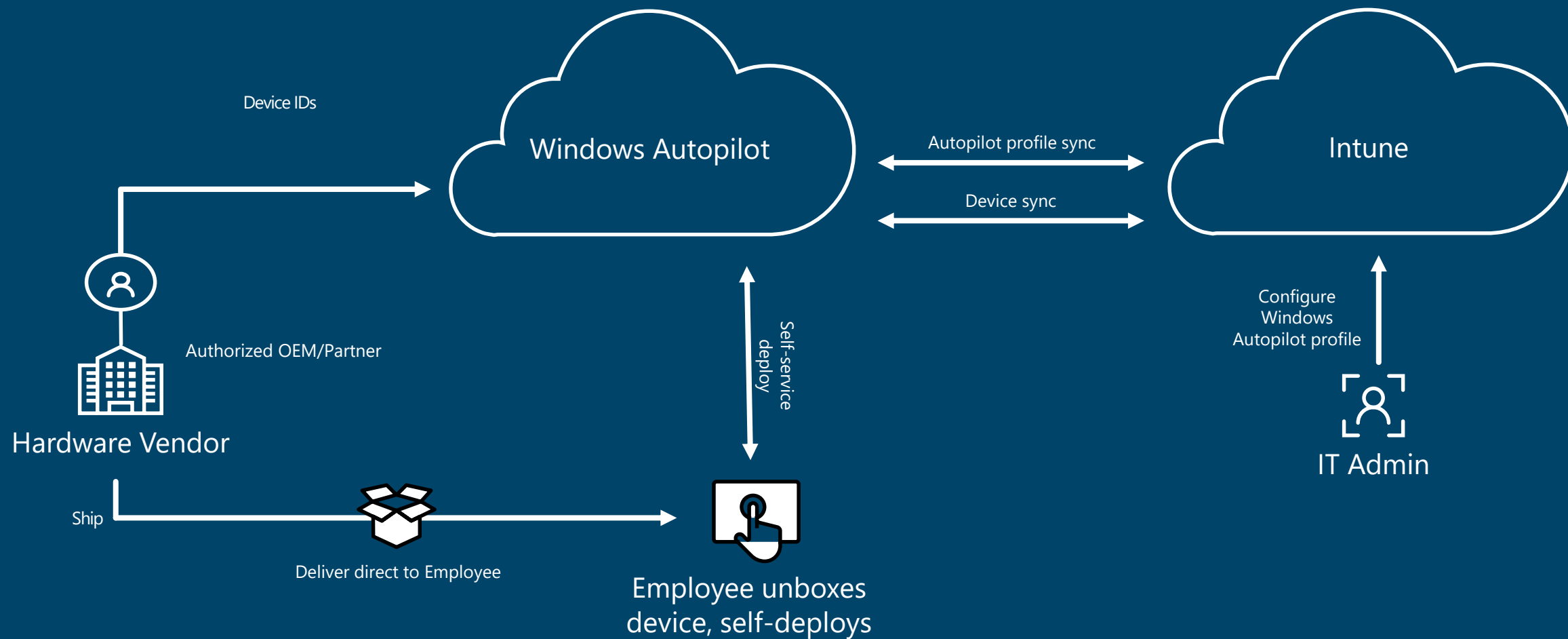
# DEMO

Assigning a profile

# Windows Autopilot

Step 3. Deploy!

# Windows Autopilot overview



# Windows Autopilot

## Licensing requirements

One of the following, to provide needed Azure Active Directory (automatic MDM enrollment and company branding features) and MDM functionality:

- Microsoft 365 Business subscriptions
- Microsoft 365 F1 subscriptions
- Microsoft 365 Academic subscriptions
- Microsoft 365 Enterprise E3 or E5 subscriptions
  
- Enterprise Mobility + Security (EMS) E3 or E5 subscriptions
- Azure Active Directory Premium P1 or P2 & Microsoft Intune (or an alternative MDM service)

# Windows Autopilot

## One-time configuration tasks

### Azure Active Directory

- Configure automatic MDM enrollment
- Configure Company Branding
- Enable Windows Subscription Activation if desired
- Ensure users can join devices to Azure AD (for user-driven mode)

### Microsoft Intune

- Enable the enrollment status page
- Ensure users can enroll devices in Intune
- Set up enrollment restrictions so only Autopilot-registered devices can enroll (optional)

# Windows Autopilot

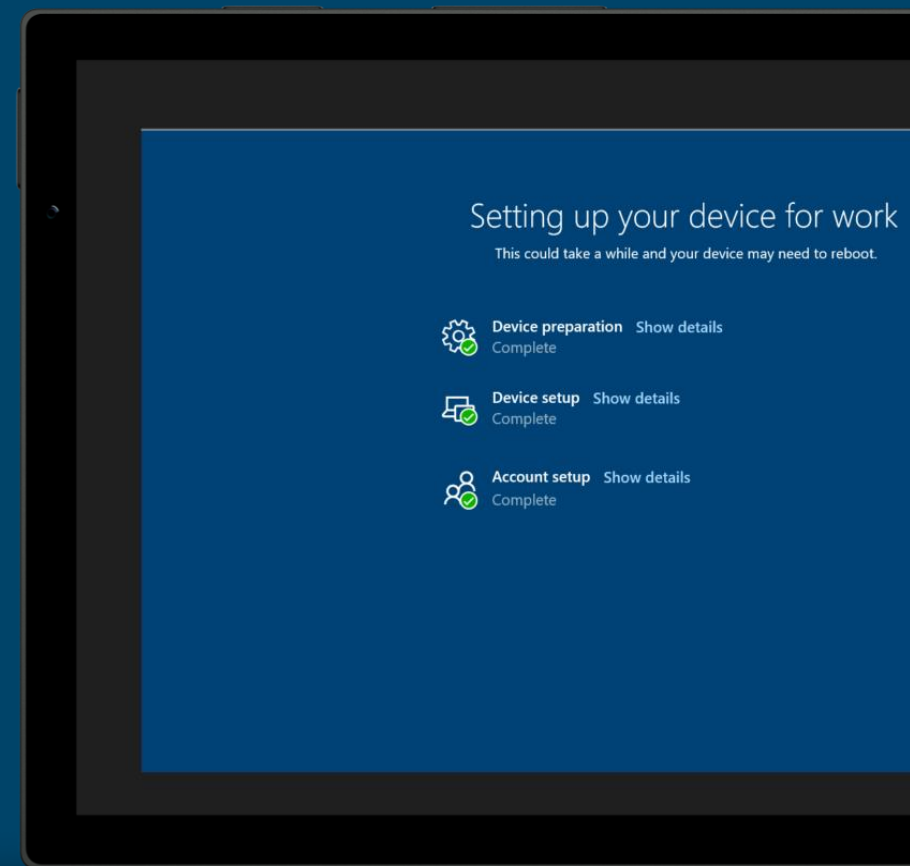
## Enrollment status page

Ensure policies, apps and settings are complete prior to the end user gaining access to the desktop

- Confirm minimum baseline requirements
- Protect data during device set up
- Deliver a compliant secure device
- Personalize the out of box experience
- Unlock Windows 10 in S mode (1809)

### Requirements

- Windows 10, version 1803 (with May cumulative update)
- Azure Active Directory Premium
- Microsoft Intune



# Duration Autopilot /w ESP deployment



A horizontal bar chart with four bars of increasing length, each ending in an arrowhead pointing to the right. The bars are white with a thin black outline. The text is white and placed inside the bars. The bars are arranged in a descending staircase pattern from top-left to bottom-right.

Duration	Percentage
less than 40 minutes	78%
less than 60 minutes	82%
less than 120 minutes	94%
longer than 120 minutes	6%

78% finished in less than 40 minutes

82% finished in less than 60 minutes

94% finished in less than 120 minutes

6% took longer than 120 minutes



# DEMO

Configuring the Enrollment Status Page (ESP)



# Windows Autopilot Deployment Scenarios

AVAILABLE (1703)

## User-driven mode with Azure AD Join

Windows 10 1703  
and above

Join device to Azure  
AD, enroll in  
Intune/MDM

AVAILABLE (1809)

## Self-deploying mode

Windows 10 1809  
and above

No need to provide  
credentials,  
automatically joins  
Azure AD

AVAILABLE (1809)

## User-driven mode with Hybrid Azure AD join

Windows 10 1809  
and above

Join device to AD,  
enroll in Intune/MDM

AVAILABLE (1809)

## Windows Autopilot for existing devices

Windows 10 1809  
and above

Windows 7 to  
Windows 10  
  
ConfigMgr task  
sequence, followed  
by Windows  
Autopilot user-driven  
mode

AVAILABLE (1903)

## White Glove

Windows 10 1903  
and above

White glove partners  
or IT staff can pre-  
provision Windows 10  
PC to be fully  
configured and  
business-ready for an  
org or user

# Windows Autopilot

User-driven mode with Azure AD Join



# Windows Autopilot

Self-deploying mode

# Windows Autopilot

## Self-deploying mode with Azure AD

### Prerequisites

- Windows 10 version 1809
- Azure Active Directory Premium
- Microsoft Intune (Device Based)
- Device with TPM 2.0

### Steps

- Device connected to Internet
- Register device with Windows Autopilot
- Assign Intune Autopilot Profile configured for self-deploying mode
- Boot device

# How would you use Autopilot to deploy...

Digital signage



Multi app kiosk



Shared PC



Single app kiosk



VDI clients





# DEMO

Configuring Self-deploying mode (kiosk)

# Windows Autopilot

User-Driven Hybrid Azure AD join

# Windows Autopilot

## User-Driven deployment with Hybrid Azure AD

### Prerequisites

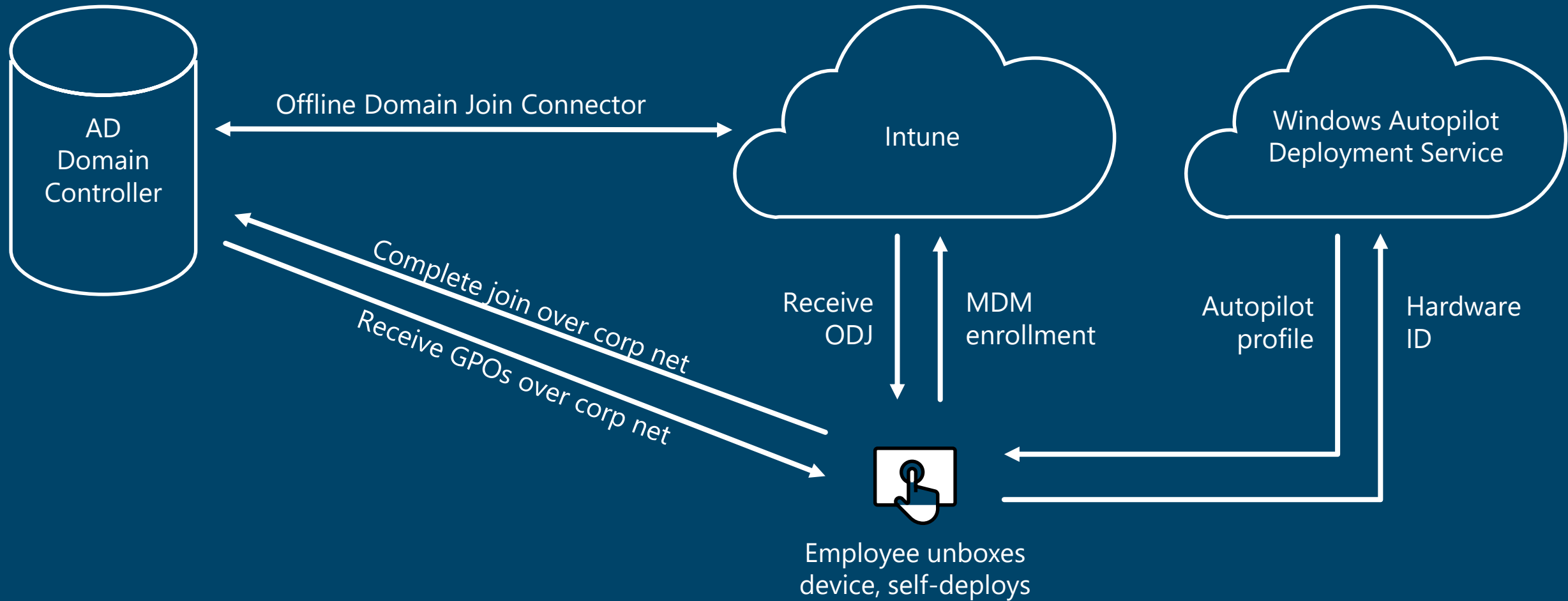
- Windows 10 version 1809
- Azure Active Directory Premium
- Microsoft Intune
- Connected to corp network

### Steps

- Set up ODI connector from AD to Intune
- Register device with Windows Autopilot
- Assign Intune Autopilot Profile configured for Hybrid Azure AD join
- Boot device

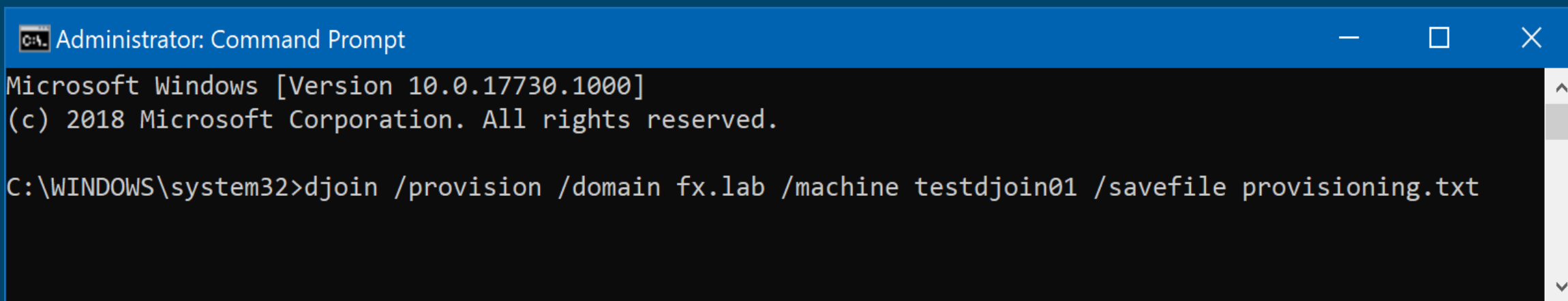


# Hybrid Azure AD Join through Windows Autopilot



# Let's talk about ODJ blobs

- Stands for an Offline Domain Join blob
- At the center of the Hybrid Autopilot flow
- You can generate your own blob from any domain joined machine if you have rights to join



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17730.1000]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>djoin /provision /domain fx.lab /machine testdjoin01 /savefile provisioning.txt
```

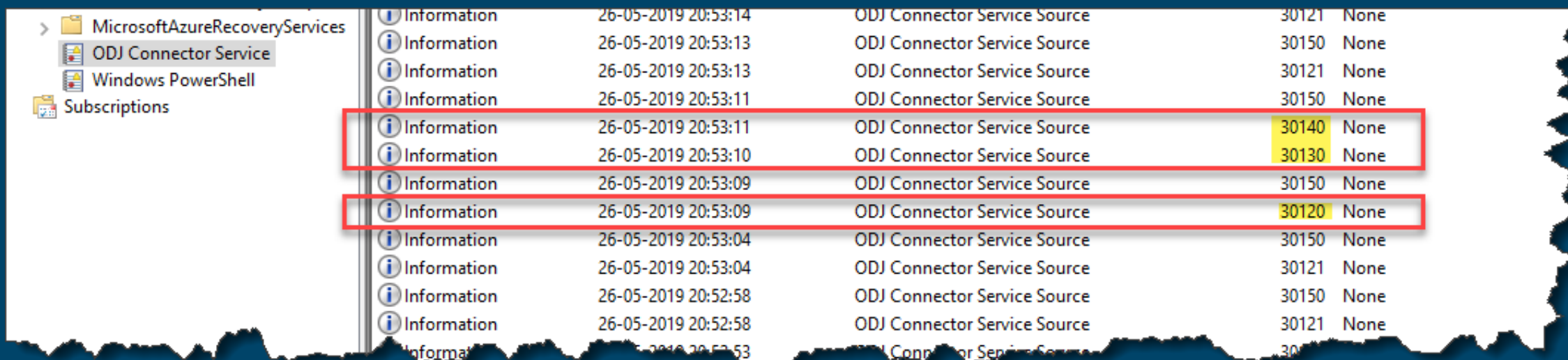


# DEMO

User-driven deployment with Hybrid Azure AD join

# Event Log ODJ Connector Service

- 30120 = Offline Domain Join Blob download success (policy)
- 30130 = Offline Domain Join Blob request success
- 30140 = Offline Domain Join Blob upload success



Information	26-05-2019 20:53:14	ODJ Connector Service Source	30121	None
Information	26-05-2019 20:53:13	ODJ Connector Service Source	30150	None
Information	26-05-2019 20:53:13	ODJ Connector Service Source	30121	None
Information	26-05-2019 20:53:11	ODJ Connector Service Source	30150	None
Information	26-05-2019 20:53:11	ODJ Connector Service Source	30140	None
Information	26-05-2019 20:53:10	ODJ Connector Service Source	30130	None
Information	26-05-2019 20:53:09	ODJ Connector Service Source	30150	None
Information	26-05-2019 20:53:09	ODJ Connector Service Source	30120	None
Information	26-05-2019 20:53:04	ODJ Connector Service Source	30150	None
Information	26-05-2019 20:53:04	ODJ Connector Service Source	30121	None
Information	26-05-2019 20:52:58	ODJ Connector Service Source	30150	None
Information	26-05-2019 20:52:58	ODJ Connector Service Source	30121	None
Information	26-05-2019 20:52:53	ODJ Connector Service Source	30121	None

# Windows Autopilot

Windows Autopilot for existing devices

# Windows Autopilot

## Windows Autopilot for existing devices

### Prerequisites

- Windows 10 version 1809
- Azure Active Directory Premium
- Microsoft Intune
- SCCM or MDT

### Steps

- Create task sequence to deploy generic Windows 10 image with needed drivers
- Deploy task sequence to existing devices
- Install Windows 10 and proceeding through Windows Autopilot user-driven process to join device to Azure AD



# January 14, 2020



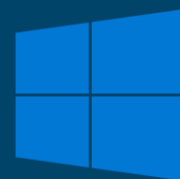
OneDrive  
for Business

Microsoft Intune

Microsoft  
System Center



Windows 7



Windows 10





# DEMO

Autopilot for existing devices

DEMO-WindowsAutopilotForExistingDevices.ps1\* X

```
1  # Step 1: Install the necessary modules:
2  Install-Module AzureAD -Verbose
3  Install-module WindowsAutopilotIntune -Verbose
4
5  # Step 2: Log into Intune
6  Connect-AutopilotIntune -user rop@apento.com
7
8  # Step 3-1 Retrieve all the Windows Autopilot profiles associated with your Intune tenant.
9  Get-AutopilotProfile
10
11 # Step 3-2 Retrieve all the Windows Autopilot profiles in JSON format
12 Get-AutopilotProfile | ConvertTo-AutopilotConfigurationJSON
13 |
```

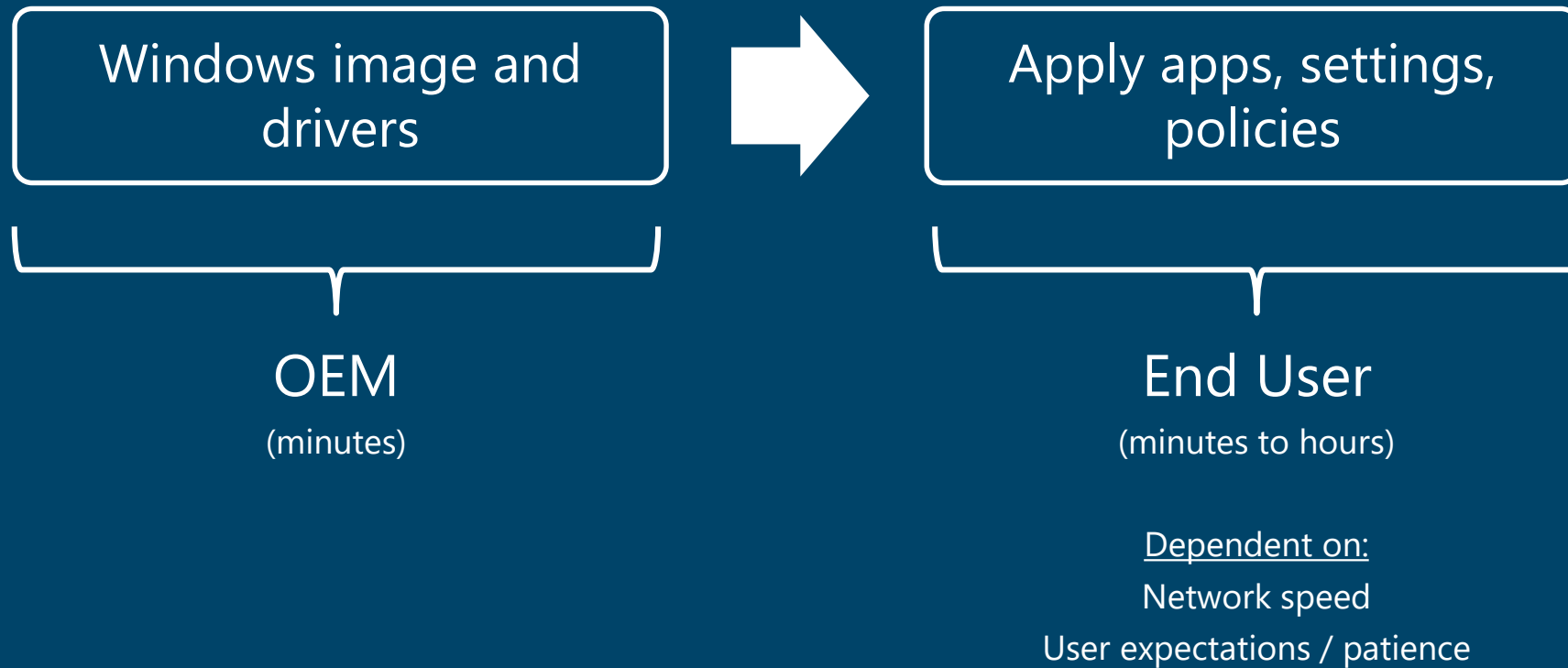


# Windows Autopilot

White Glove

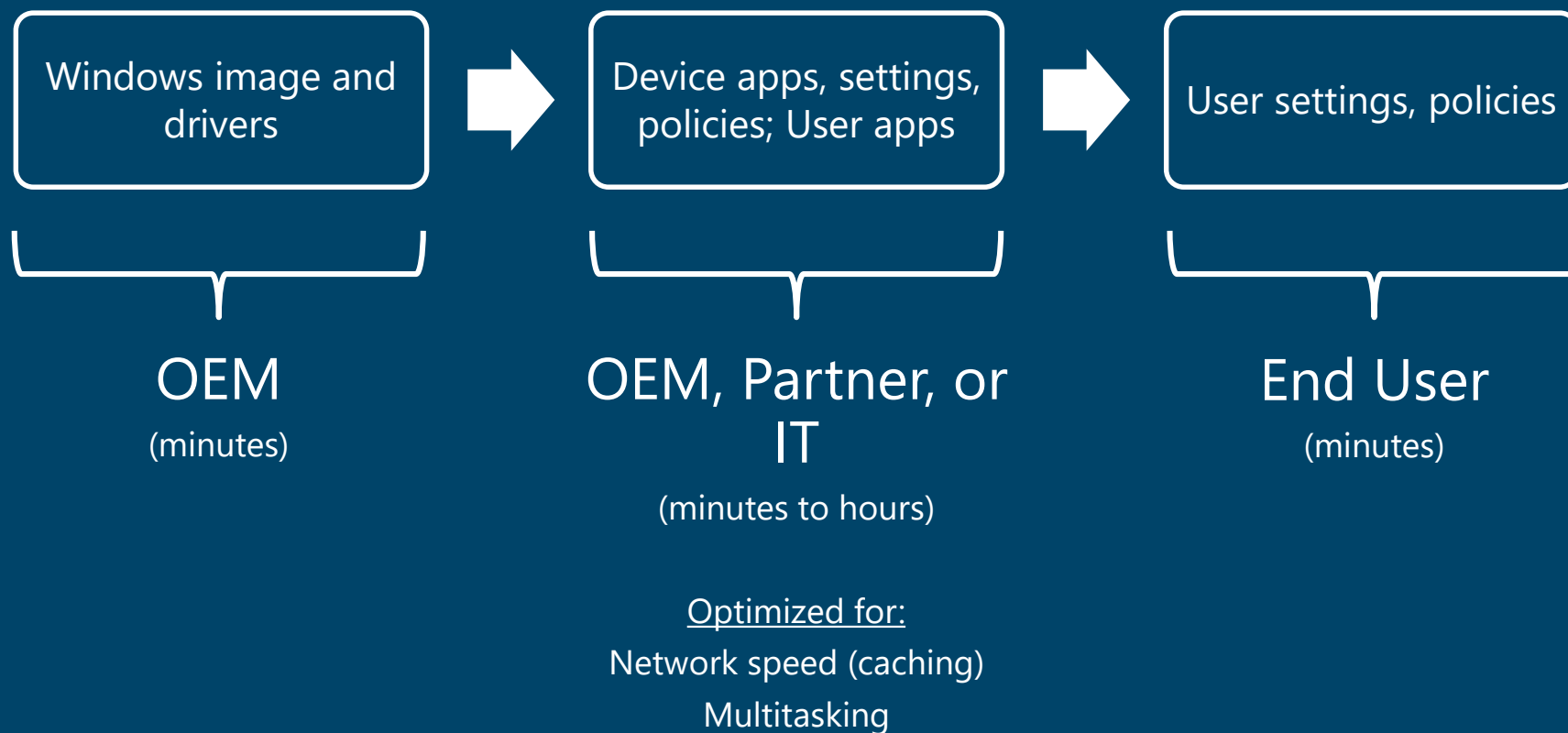
# Windows Autopilot

## Today (1809)



# Windows Autopilot

## With "White Glove" (1903)



# Windows Autopilot

## White Glove

### Prerequisites

- Windows 10 version 1903
- Azure Active Directory Premium
- Microsoft Intune
- TPM 2.0
- Ethernet connectivity

### Steps

- User-driven Azure AD join
- Or User-driven with Hybrid Azure AD join
- Register device with Windows Autopilot
- Assign Intune Autopilot Profile
- Boot device
- From the first OOB screen, press the Windows key five times

# Enable White Glove

- White Glove is still in preview...
- Use this URL to access the Intune portal:

<https://portal.azure.com/?microsoft.intune.enrollment.enableWhiteGlove=true>

Home > Microsoft Intune > Device enrollment - Windows enrollment > Windows Autopilot deployment profiles > Create profile

### Create profile

Windows PC

1 Basics 2 Out-of-box experience (OOBE) 3 Scope tags 4 Assignments 5 Review + create

Configure the out-of-box experience for your Autopilot devices

\* Deployment mode ⓘ User-Driven

\* Join to Azure AD as ⓘ Azure AD joined

End user license agreement (EULA) ⓘ Show Hide

**i** What does it mean to skip the EULA? ⓘ

Privacy settings ⓘ Show Hide

Hide change account options ⓘ Show Hide

User account type ⓘ Administrator Standard

Allow White Glove OOBE ⓘ No Yes

Apply device name template ⓘ No Yes

Create a unique name for your devices. Names must be 15 characters or less, and can contain letters (a-z, A-Z), numbers (0-9), and hyphens. Names must not contain only numbers. Names cannot include a blank space. Use the %SERIAL% macro to add a hardware-specific serial number. Alternatively, use the %RAND:x% macro to add a random string of numbers, where x equals the number of digits to add.

\* Enter a name APENTO-%RAND:5% ✓

# What would you like to do?



## Install provisioning package

Install a provisioning package for work or school



## Windows Autopilot provisioning

Pre-provision the device with settings and apps



## Reset device

Reset the device but keep any user accounts

Cancel

Continue





# Windows Autopilot Configuration

Organization:	No organization found
Deployment profile:	No profile found
Assigned user:	Not assigned
Elapsed time:	0 h 0 min

For more details, select View diagnostics. To factory reset this device and start over, select Reset.

[View diagnostics](#)[Retry](#)[Reset](#)

Basics

# Something went wrong

You can try again, or skip for now.

AUTOPILOTWHITEGLOVEUPDATE

Try again

Skip



Basics

# Windows Autopilot Configuration



Organization:	apento.com
Deployment profile:	APENTO Consultants
Assigned user:	Not assigned

Scan QR code to retrieve device provisioning information.

Cancel Refresh

Provision



# Windows Autopilot Configuration



Organization:	apento.com
Deployment profile:	APENTO Consultants
Assigned user:	Not assigned
Elapsed time:	0 h 1 min

Print welcome letter and shipping label, then click Reseal to reseal the device.

Reseal





# DEMO

## White Glove

Welcome

Continue in English?

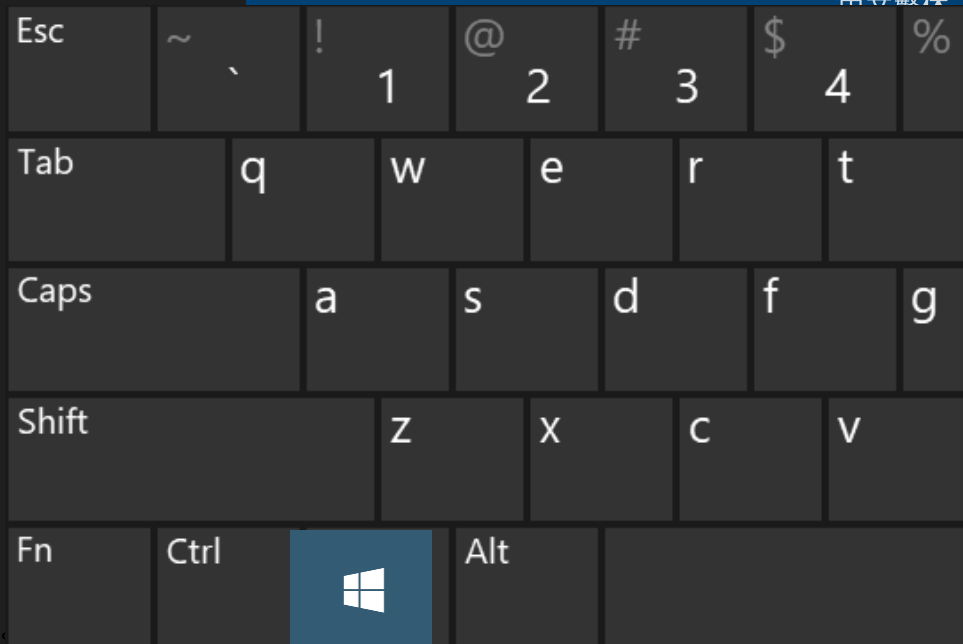
Let's take an alternate path though by pressing a key combination

English

Français

Español

中文繁体



Next



# What would you like to do?



## Install provisioning package

Install a provisioning package for the user's workplace.



## White Glove provisioning

Pre-provision the device with settings and apps to make it ready for the end user.



## Reset device

Reset the device to factory settings.



## Clean PC reset

Bla bla...

Cancel

Continue



Bla...



# White Glove Device Provisioning

Organization: TECHORAMA  
Deployment profile: User-driven AAD  
Assigned user: Not assigned  
White glove: Enabled



Scan QR code above to retrieve device provisioning information.

Back

Refresh

Provision device





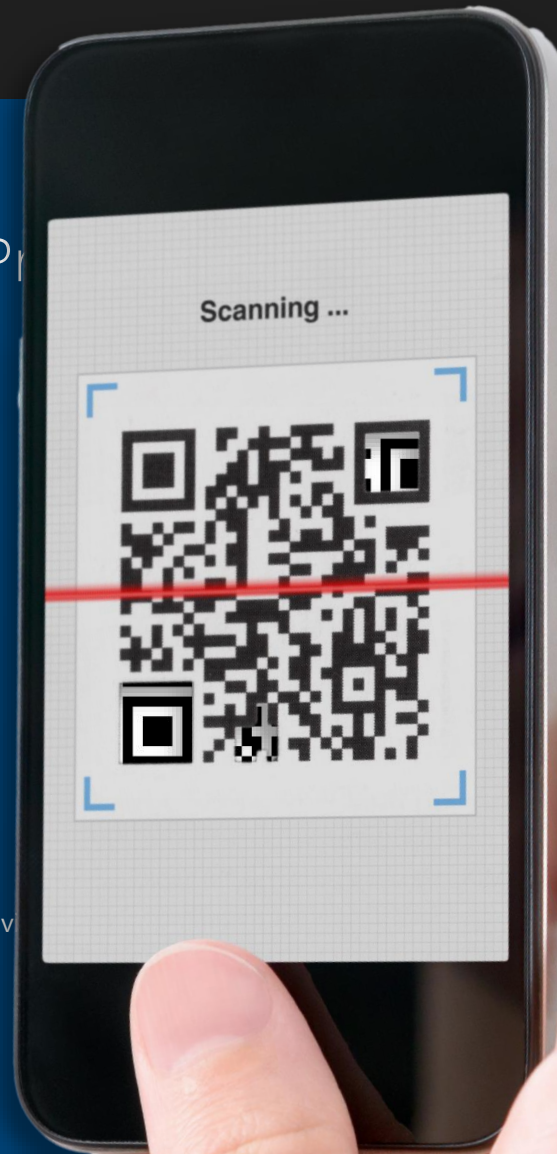
## White Glove Device Provisioning

Organization: TECHORAMA  
Deployment profile: User-driven AAD  
Assigned user: Not assigned  
White glove: Enabled

Scan QR code above to retrieve device provisioning information

Back

Refresh



Device





Now we can go look for any updates...



Alright, you're connected. Now we can go look for any updates...



# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)

Getting things ready...



**Device setup** [Show details](#)

Waiting for previous step to finish



**Account setup** [Show details](#)

Waiting for previous step to finish

Joined to Hybrid/Azure  
AD and enrolled into  
Intune

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Getting things ready...



**Account setup** [Show details](#)  
Waiting for previous step to finish

Device-targeted apps  
and settings are  
processed

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Working on it...



**Account setup** [Show details](#)  
Waiting for previous step to finish

Device-targeted apps  
and settings are  
processed

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Still working on it...



**Account setup** [Show details](#)  
Waiting for previous step to finish

Device-targeted apps  
and settings are  
processed

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Waiting for previous step to finish

Device-targeted apps  
and settings are  
processed

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Getting things ready...

{optionally} user-  
targeted apps can be  
processed



# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Working on it...

# Setting up your device for work

This could take a while and your device may need to reboot.



**Device preparation** [Show details](#)  
Complete



**Device setup** [Show details](#)  
Complete



**Account setup** [Show details](#)  
Complete

# Windows Autopilot Configuration

Organization: TECHORAMA  
Deployment profile: Self-service AAD  
Assigned user: user@techorama.be  
White glove: Enabled  
Time to configure: 1 hour 37 minutes



White glove provisioning is complete.  
Print welcome letter and shipping label, then click reseal to reseal the device.

Reseal

**Now the device (with all apps,  
updates, and policies applied)  
can be shipped to the user...**



# Future is bright

A lot of new improvements

- Delivery Optimization enhancements
- Windows Autopilot Deployment Reporting
- Intune/Business sync
- Enrollment Status Page (Intune Management Extension)
- Automatic feature update
- ...and many more



# Thank You!

## Platinum



Microsoft

## Gold



audiocodes

## Silver



au2mator

pexip

Jabra

logitech