Windows 10 – prvi dve leti

Slavko Kukrika, MVP in prijazen fant

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TEHNOLOGIJA
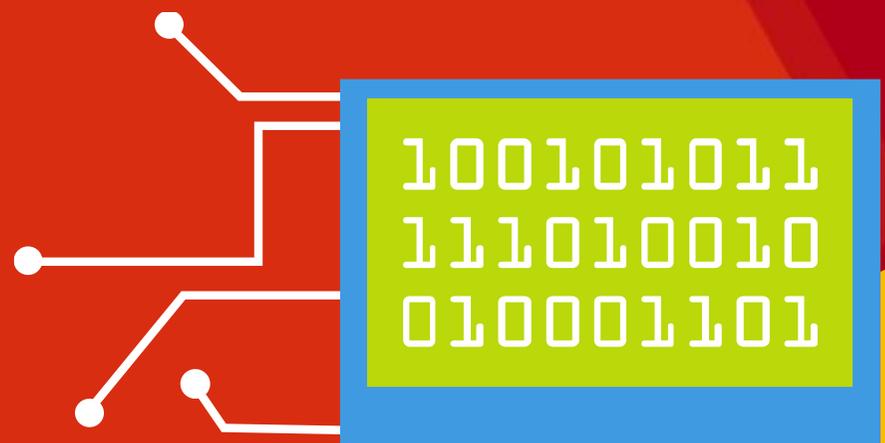
Agenda

→ Windows 10 is Windows as a Service

→ Editions and features

→ New and improved in Creator Update

→ Mobile devices are on the rise

→ Traditional and modern deployment

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Strojna oprema se razvija

CPU v mnogo oblikah

Ultra-mobilni

Minimalna poraba

Kompaktni

64-bitni procesorji
Nova stopnja zmogljivosti

Grafični procesorji
(Moorov zakon)^2 in naprej

Omrežja
Wireless vsepovsod

Raznovrstni odjemalci

Hitrejša lokalna omrežja

Procesorji z več jedri
zmogljivejši _in_ učinkovitejši

Pomnilniški mediji

Moorov zakon za diske

SSD na vsakem koraku

Pomnilnik
Večji
Hitrejši

LCD prikazovalniki
Na vsakem koraku
Večji, cenejši, višja
ločljivost, format 16:9
Dotik kot način interakcije

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Work is no longer a location

73%

53%

32%

Send their last email of the day after leaving the office

Information workers use three or more devices for work

Employees are accessing sensitive data from personal devices

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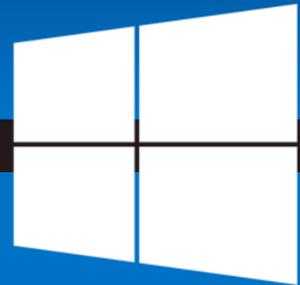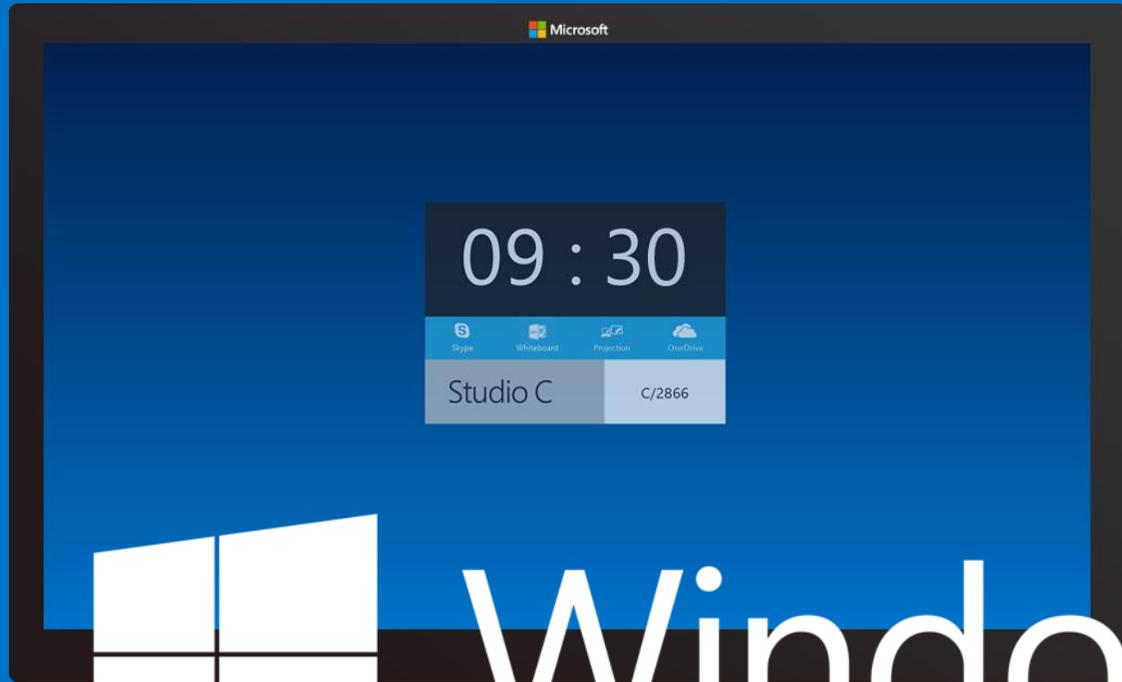
Quick quiz!

- When was Windows 10 launched?
  - Which version was used for that Windows 10 build?
  - Until when is that Windows 10 version supported?
- Since then, how many feature updates were released?
  - When was last Windows 10 feature update (version) released?

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Windows as a Service

- Traditional deployment
  - New release every 3-5 years
  - Attackers take advantage of periods between releases
  - Long gaps between new features
- Windows as a Service
  - New Windows release twice per year
  - Continual Windows 10 improvements
 - Incremental update each month
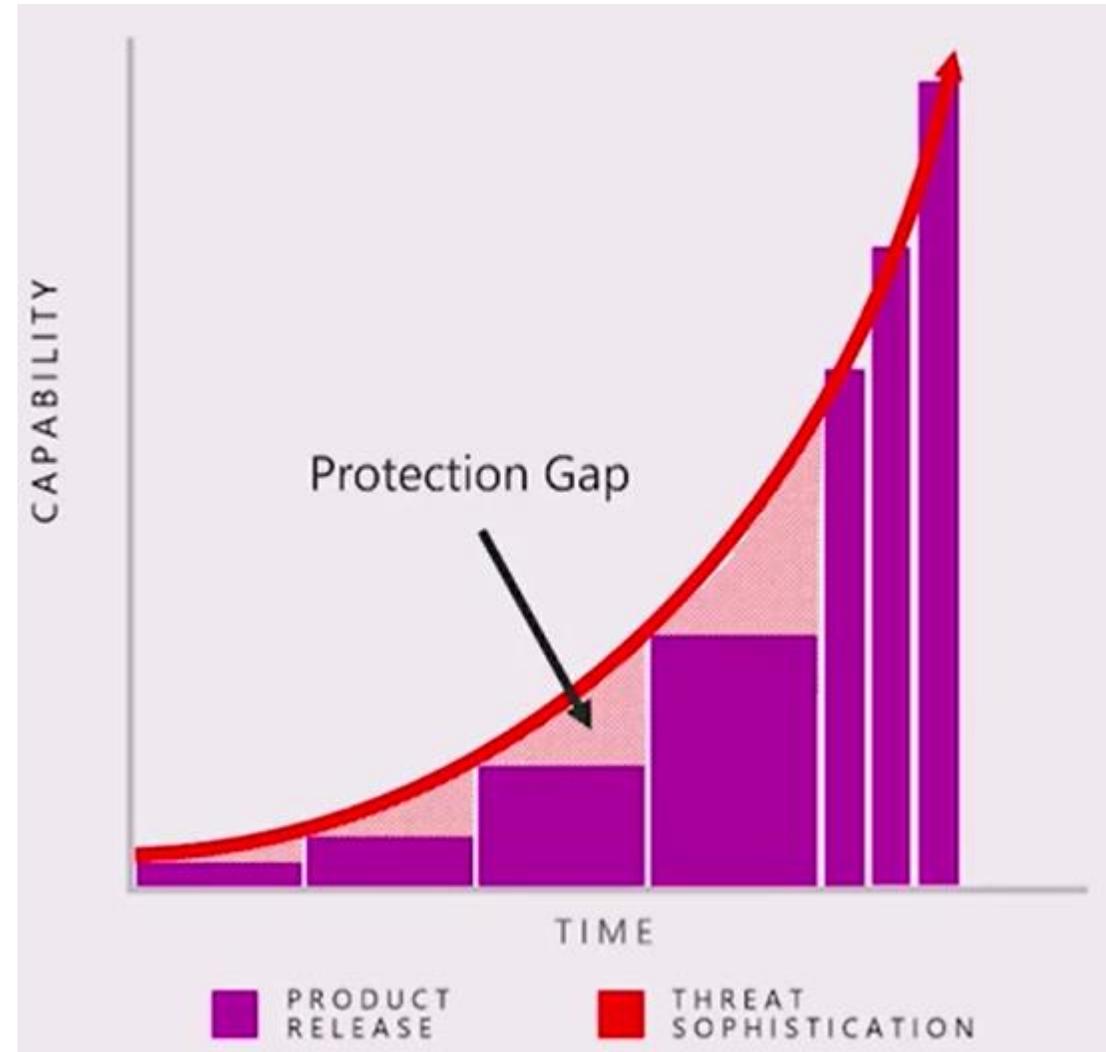
Windows as a Service: Servicing Windows

With Windows 7 and 8, servicing choices added complexity and cost, increased fragmentation, and reduced quality

What users
are running

What
Microsoft
is testing
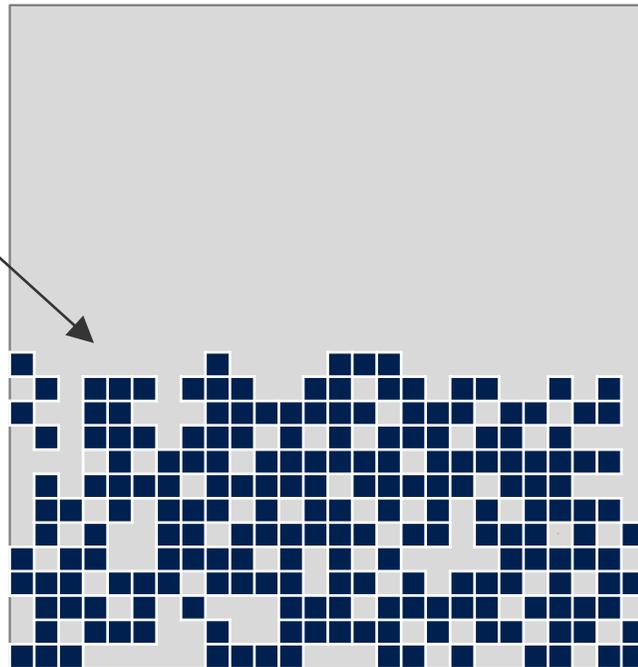
**Typical Windows 7 PC:
Selectively Patched**
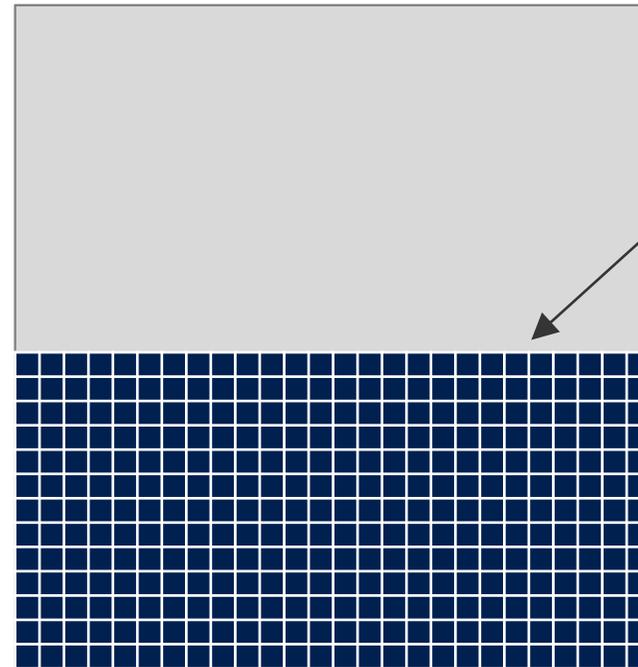
**Windows 7 Test Lab PC:
Fully Patched**

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Windows as a Service: Servicing Windows

Quality Updates

A single **cumulative** update each month

Security fixes, reliability fixes, bug fixes

Supersedes the previous month's update

No new features

Try them out with Security Update Validation Program (SUVP)

Feature Updates

Targeting **twice per year** with new capabilities

Very reliable, with built-in rollback capabilities

Simple deployment using in-place upgrade, driven by existing tools

Try them out with Insider Preview

Changes being implemented for older Windows releases as well

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Windows 10 Quality Updates size

Full Update Size (MB)　　Express Download Size (MB)

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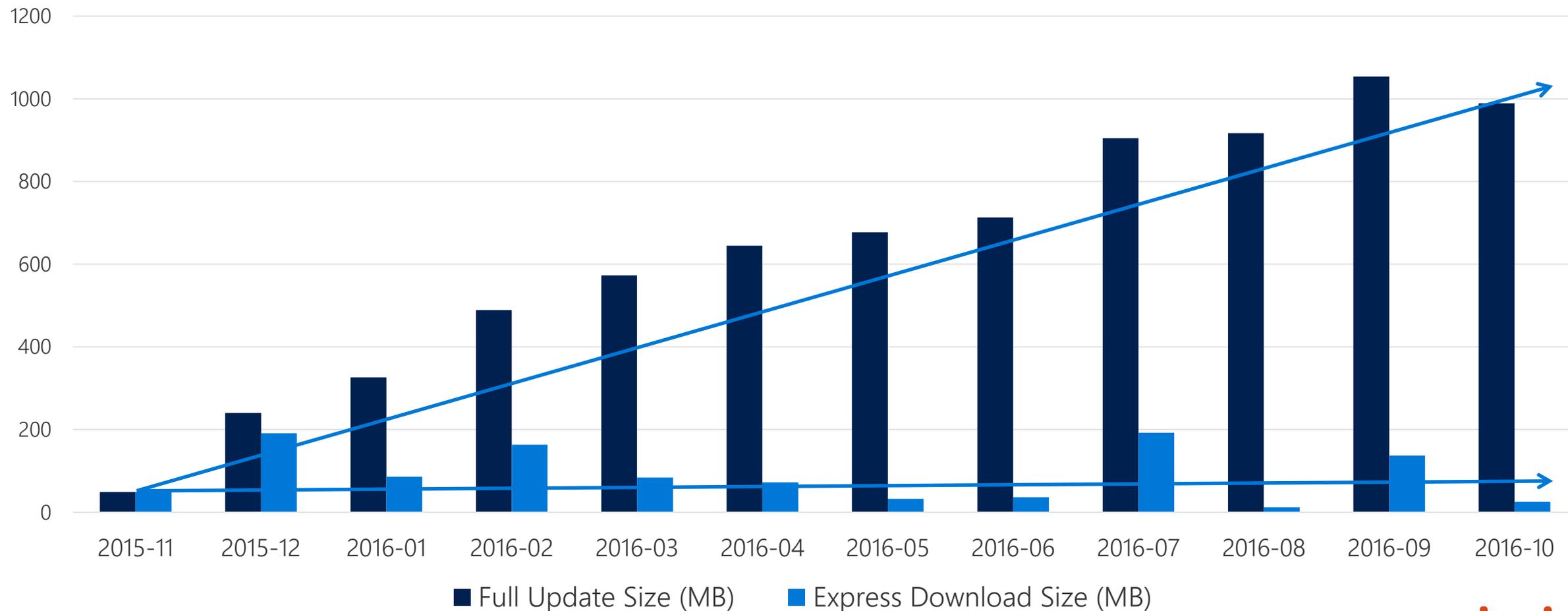
Improving Windows as a Service

Current Challenges	Announced Changes
Windows 10 releases are unpredictable "Two to three times per year" (with exceptions) Release timeframes are not disclosed in advance	**Windows 10 releases are predictable** Twice every year, targeting March and September
Windows 10 servicing timelines are unclear "We service two CBB releases at all times, with a 60-day grace period" Customers are unable to predict end of servicing dates	**Windows 10 servicing timelines are clear** Each Windows 10 feature release will be serviced and supported for 18 months from the date of release
Windows 10 updates are too large Periodic feature updates and monthly quality updates are challenging to deploy due to their size	**Windows 10 updates are measurably smaller** Improvements available in Windows 10 1607 and Windows 10 1703, with further improvements coming later this year (as previously announced)

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Predictable update cadence

Windows 10 1703

Windows 10 1709

Windows 10 1803
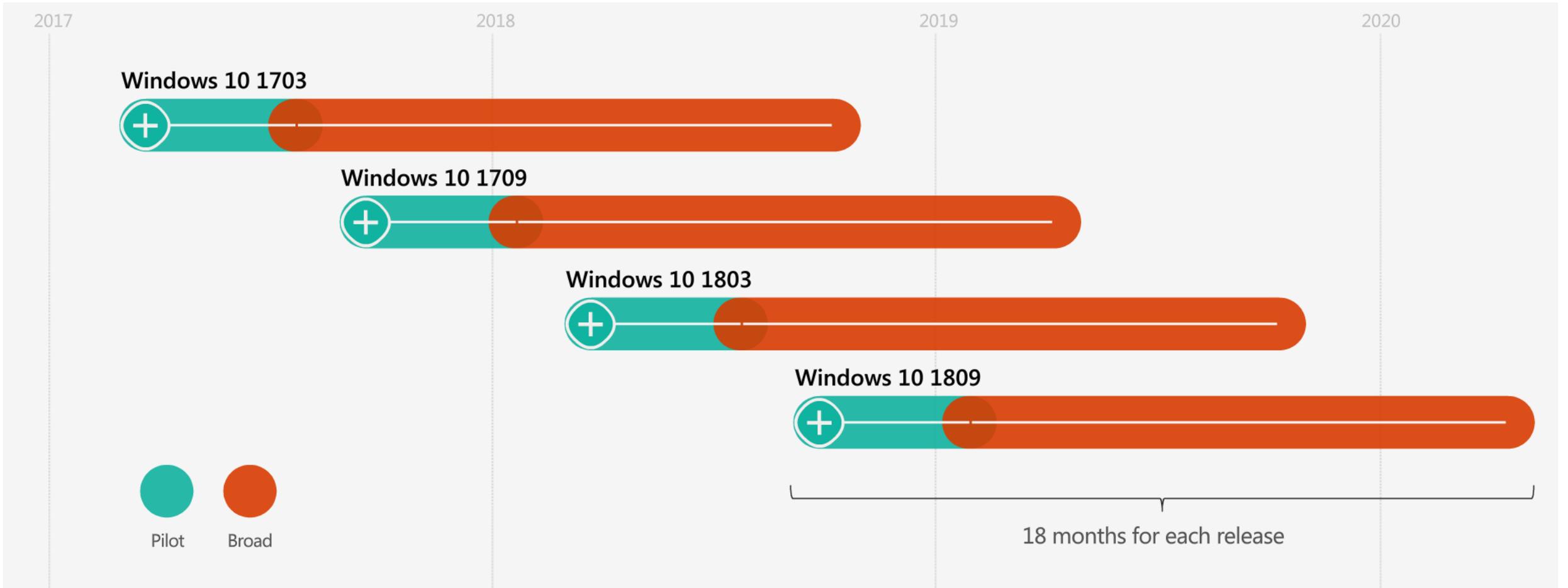
Windows 10 1809

Pilot   Broad

18 months for each release

2017   2018   2019   2020

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Windows 10 editions

Feature	Windows 10 Home	Windows 10 Pro	Windows 10 Enterprise	Windows 10 Education
Max. physical CPU	1	2	2	2
Max. memory (x64)	128 GB	2 TB	2 TB	2 TB
MDM support	✔	✔	✔	✔
Domain Join		✔	✔	✔
Remote Desktop	Client only	✔	✔	✔
Boot from VHD		✔	✔	✔
BitLocker and BitLocker To Go		✔	✔	✔
AppLocker			✔	✔
Hyper-V		x64 only	x64 only	x64 ony
Windows To Go			✔	✔
Device Guard			✔	✔

All editions include:
Start menu and Live Tiles
Continuum and Tablet mode
Cortana
Paint 3D
Microsoft Edge
Windows Hello
Windows Universal Apps

Windows 10

Enterprise E3 and E5

Subscription based, for anyone
Automatic activation
Automatic step-up from Pro

* Only some of the Windows 10 features are listed

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Comparing commercial desktop edition features

	PRO	ENTERPRISE E3	ENTERPRISE E5
SECURITY AND IDENTITY			
Windows Hello for Business	●	●	●
Windows Information Protection	●	●	●
Credential Guard		●	●
Device Guard		●	●
Windows Defender Advanced Threat Protection			●
MANAGEMENT AND DEPLOYMENT			
Domain Join and Azure AD Join	●	●	●
MDM Enablement	●	●	●
Windows Store for Business, Private Catalog	●	●	●
Managed User Experience		●	●
AppLocker		●	●
Microsoft Application Virtualization (App-V)		●	●
Microsoft User Environment Virtualization (UE-V)		●	●
Cortana Management		●	●
Windows Store Management		●	●
Advanced Telemetry Controls		●	●

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Microsoft Application Virtualization (App-V)

- App-V client included in Windows 10
  - Virtual applications work like installed applications
  - Virtual applications use Windows standards
  - App-V server infrastructure still required (App-V server and sequencer)
- Flexible Virtualization
  - Multiple App-V applications can share the same virtual environment
  - Virtual applications available dynamically, without installation
  - Designed to support highly integrated applications
- Powerful Management
  - Web-based management interface
  - PowerShell scripting allows automation and customization

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User Experience Virtualization (UE-V)

Synchronizes settings

Control over what is synchronized

- UE-V settings location templates
- Windows 10 must be domain member

Over different desktops

- Physical devices (PCs, desktops, laptops)
- Virtualn desktops (RDS/VDI)

Over different application types

- Locally installed applications
- Virtualized applications (App-V)
- Windows Store applications

UE-V Settings Storage

PC

VDI / RDS

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User Experience Virtualization (UE-V)

UE-V client

UE-V agent

Registry

Local files

Settings template catalog

Settings location templates

Settings packages

Settings storage location

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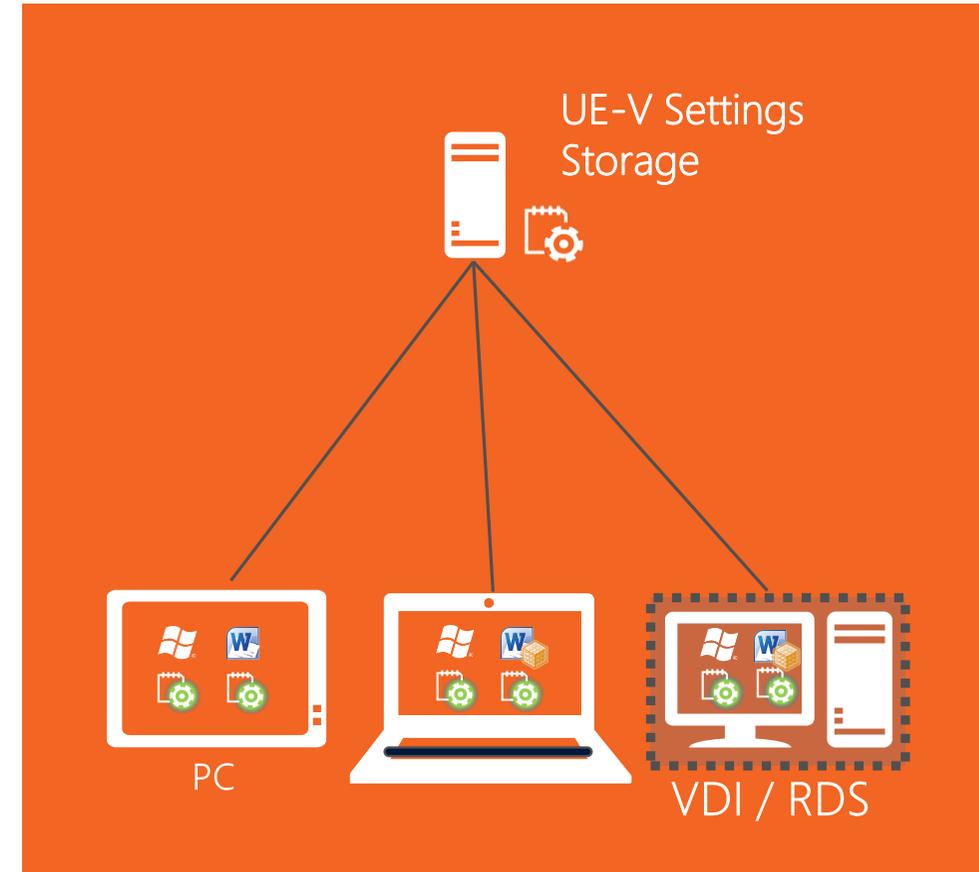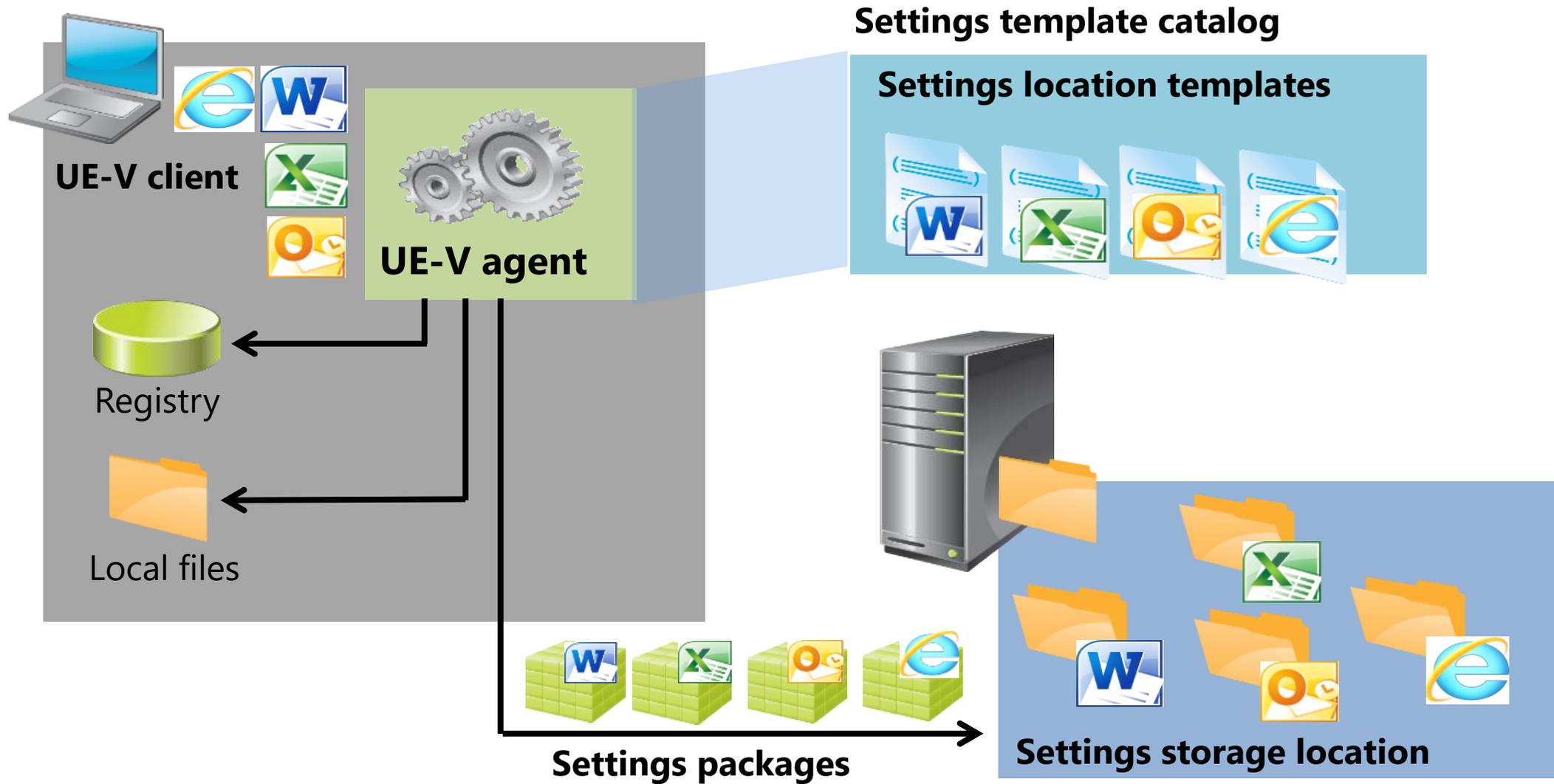
File History in Windows 10

- File History saves backup copies of user files
- Configure File History by using Control Panel or Settings app
- File History protects profile folders and libraries, by default
- You can protect additional folders by:
  - Adding them to protected libraries
  - Using the Backup options in the Settings app
- Save copies on local drive, removable drive or network location
- File History copies protected files hourly and stores indefinitely
- You can preview and restore backup copies, and restore to original or alternate location

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How File History works?

19:00

Restore 8:00

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Settings

⚙ Backup options

Overview

Size of backup: 39.5 MB

Total space on \\LON-DC1\History\: 126 GB

Last backup: 9/4/2016 7:03 AM

Back up now

Back up my files

Every hour (default) ⌄

Keep my backups

Forever (default) ⌄

Contacts · Desktop · Documents · Downloads · Favorites · Links · Music
OneDrive · Pictures · Saved Games · Searches · Videos · Documents · Music
Pictures · Videos
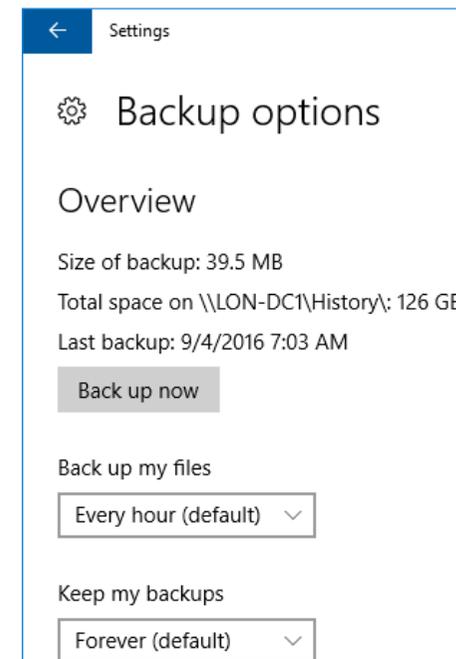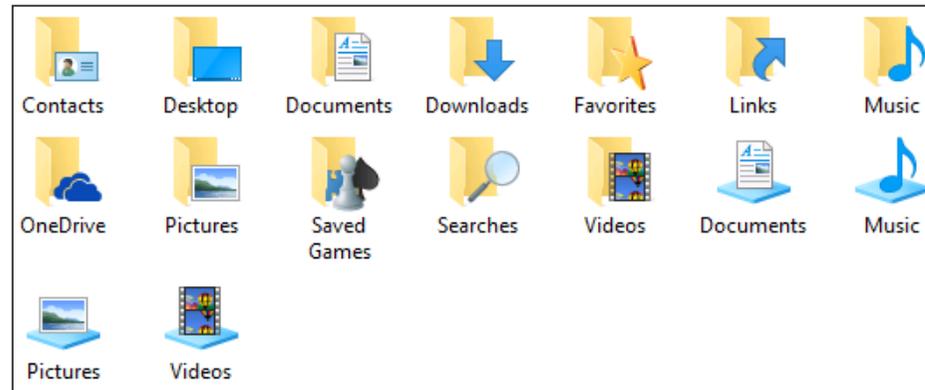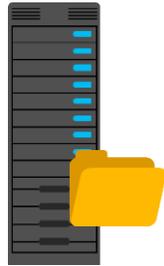
Work Folders
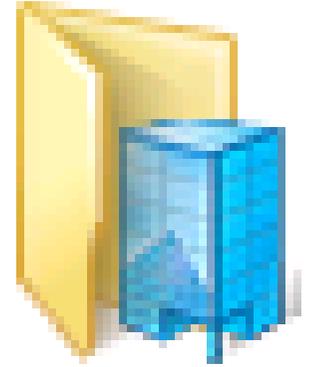
- Allow users to access their individual data
- Data is stored centrally on traditional file servers
  - File servers must be Windows Server 2012 R2 or Windows Server 2016
- Users can use multiple and various devices for access
  - Regardless of whether devices are domain-joined or not
  - Devices can run Windows 10, Windows 8.1, Android or iOS
- Allow access from any location with the connectivity
  - Local copy is available without network connectivity
- Ensure compliance with company policy
  - Access control, quotas, file screening, classification, and more
  - Local data copy can be encrypted and wiped remotely

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Windows 10 identity choices

Organization Owned

Active Directory

- Computer joins AD to establish trust
- User signs on using AD account
- Group Policy + System Center

Azure Active Directory

- Computer joins Azure AD to establish trust
- User signs on using Azure AD account
- Intune/MDM
- Settings roaming

Personally Owned (BYOD)
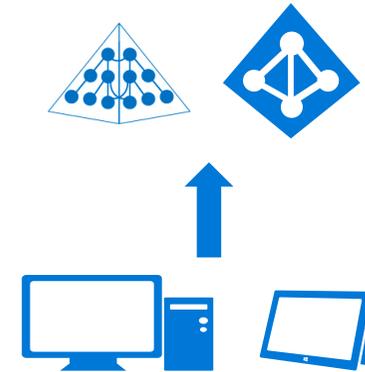
- Computer registers with AD or Azure AD via **Device Registration** to establish trust for remote resource access
- User signs in with a Microsoft account, associates an Azure AD account
- Intune/MDM

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Single sign-on to enterprise + cloud-based services

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Windows as a service drives infrastructure updates

Windows 10 can be joined to existing AD DS
Infrastructure services should be updated for managing Windows 10
Updates or newer versions needed for full support of Windows 10 features

Configuration Manager
ConfigMgr current branch 1702 recommended

Windows Server Update Services
WSUS 4.0 (Windows Server 2012 or higher) recommended, with KB 3159706
WSUS 3.0 SP2 good enough for monthly patches

Key Management Service (KMS)
Requires Windows 10 keys, hotfix 3058168 (from 2015)

Microsoft Deployment Toolkit
MDT 2013 Update 2 recommended, build 8443 is available since November 2016

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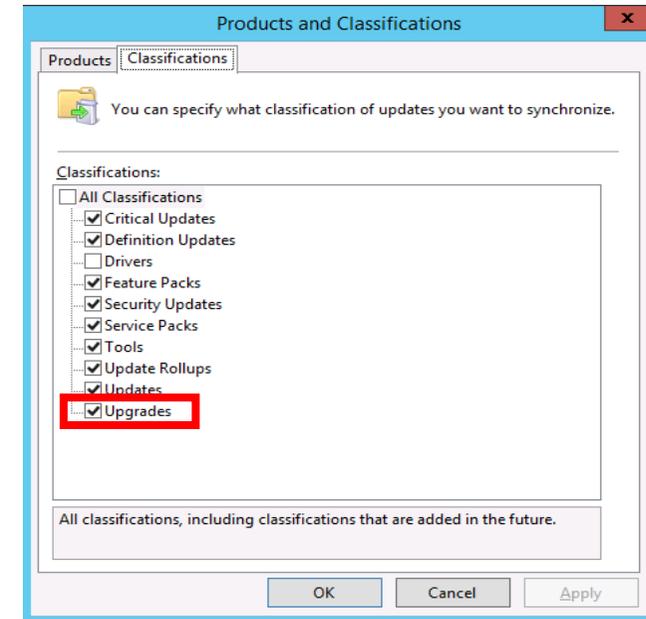
Mobile Device Management in Windows 10

Significant investments in added functionality for both mobile and desktop devices

Fully managed corporate device

Device Lockdown

BYOD: simple security settings

Phone

Desktop

Phone

Desktop

Windows 8.1 ⟹ Windows 10

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MDM in Windows 10

One consistent set of MDM capabilities across Mobile, Desktop, and IoT

ENROLLMENT
- Provisioning
- Bulk enrollment
- Simple bootstrap
- Converged protocol
- Azure AD Integration

INVENTORY
- Enhanced inventory for compliance decisions

DEVICE CONFIGURATION AND SECURITY
- Extended set of policies
- Context based policies
- Client certificates – Direct install (PFX)
- Enterprise Wi-Fi profiles
- VPN profiles
- Email provisioning
- MDM Push when user not logged in
- Kiosk Mode, Start screen configuration and control

UNENROLLMENT
- Un-enrollment with alerts
- Removal of configuration and EDP protected data

REMOTE ASSISTANCE
- Remote Lock, PIN reset, Ring, Find
- Full device wipe

APPLICATION MANAGEMENT
- Curated Windows Store Apps
- Windows Store for Business
- License reclaim/re-use
- Enterprise App management
- LOB app management
- App inventory (MDM/Store)
- App allow/deny list
- Windows Information protection

Microsoft

https://msdn.microsoft.com/windows/hardware/commercialize/customize/mdm/policy-admx-backed

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New MDM Configuration Service Providers

- Windows 10, version 1703 adds many new CSPs:
  - Policy
  - DynamicManagement
  - CleanPC
  - BitLocker
  - NetworkProxy
  - Office
  - EnterpriseAppVManagement
- MDM Migration Analysis Tool
  - Determine which GP settings are available as MDM policies

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https://github.com/WindowsDeviceManagement/MMAT

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Group Policy

New policies to support Windows 10 features:

- Start menu management
- Microsoft Edge settings
- Windows Hello settings
- App-V and UE-V settings
- Windows app management
- Windows Update deferral

No major changes in engine
No major changes in GPMC

Capabilities from Windows 8.1:

- Policy caching
- IPv6 support for printers, VPN, targeting

Capabilities from Windows 8:

- Sign-in optimization for DirectAccess
- Better use of larger registry policies
- Remote group policy refresh (GPUpdate)
- More efficient background processing

GP processing has not changed

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https://docs.microsoft.com/en-us/windows/client-management/new-policies-for-windows-10

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Group Policy administrative templates

Administrative Templates determine what settings appear and how they are grouped in GPO Editor

The central store

- Central repository for ADMX and ADML files
- Stored in SYSVOL and must be created manually
- Detected automatically

Copy new templates to central store

.admx

.adml

Registry

ADMX files

Windows 10

Domain controller

Replicated to other DCs

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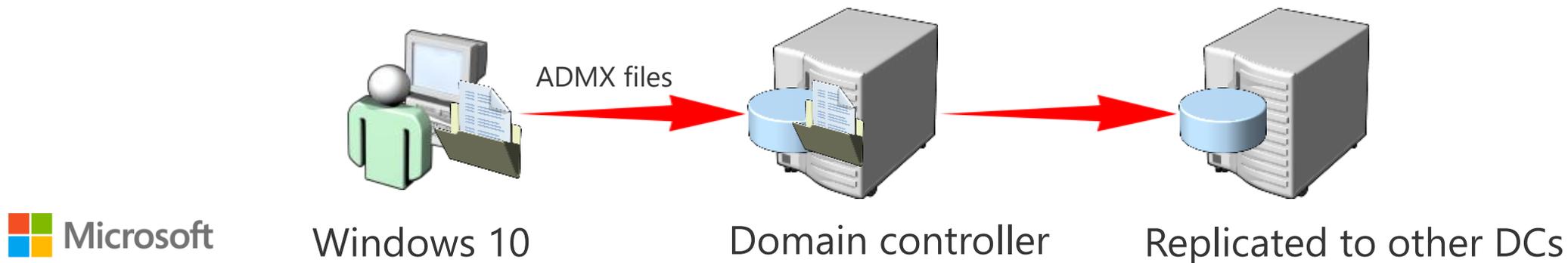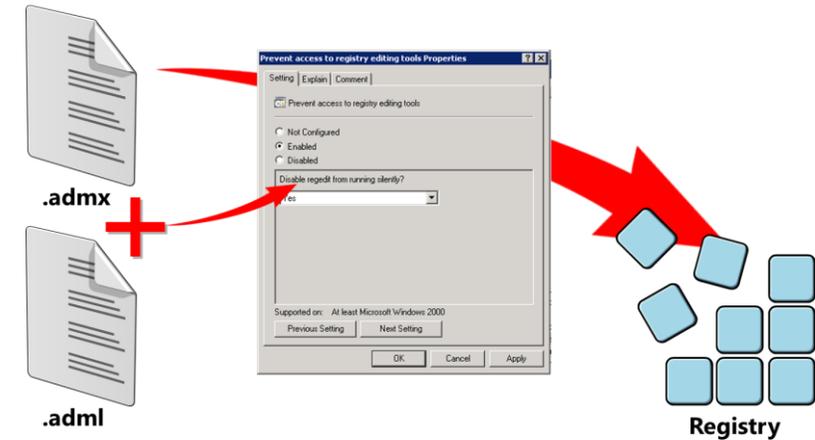
Windows Analytics

A cloud based, telemetry driven suite of services

Providing actionable information

Built on Microsoft Operations Management Suite Log Analytics

Upgrade readiness

Leverage telemetry to see what's happening in your organization

Update Compliance

Ensure that Windows devices are up to date with the latest updates

https://www.microsoft.com/en-us/windowsforbusiness/windows-analytics
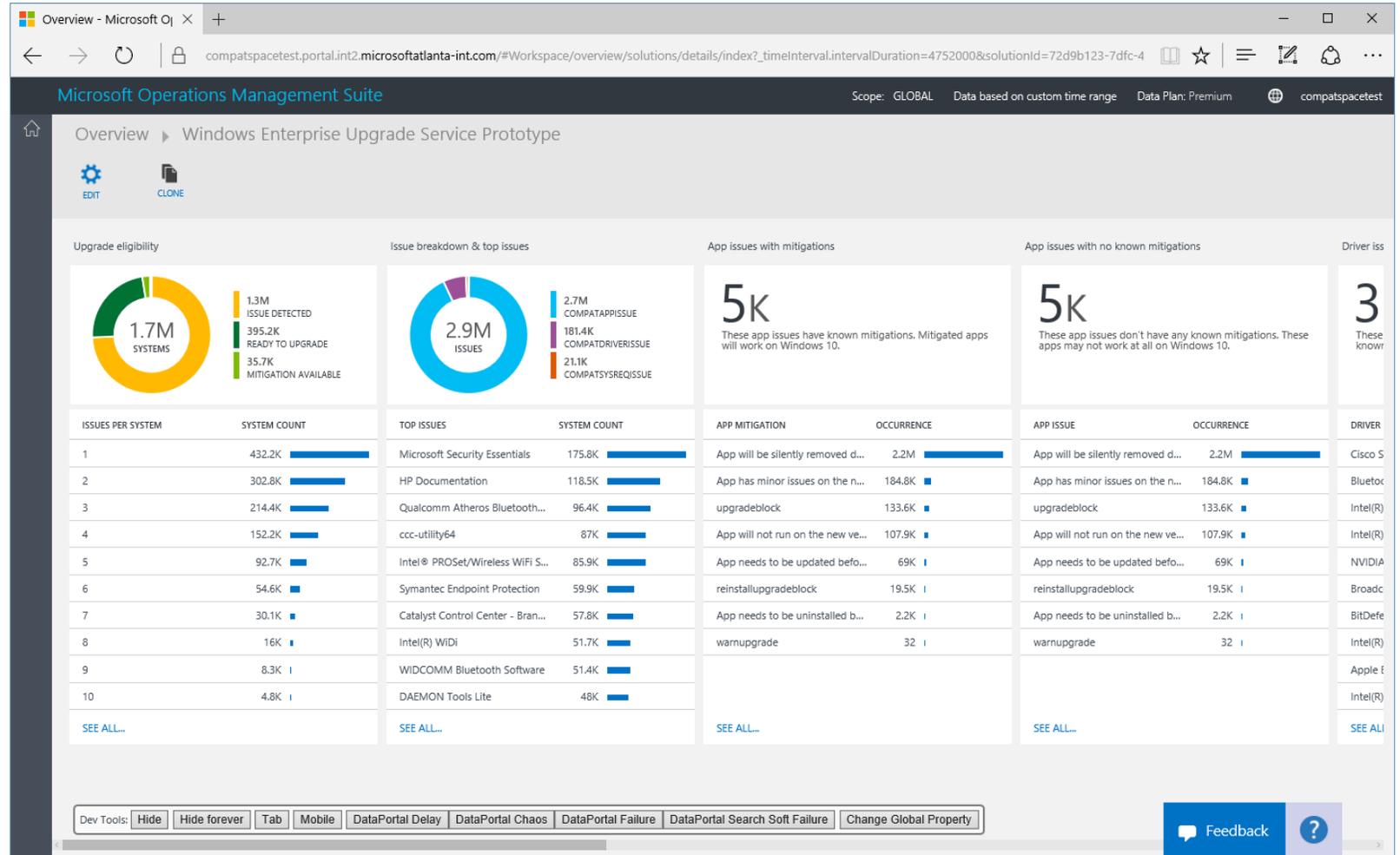
Traditional and modern deployment

From Windows 7, 8, 8.1		New Devices		Windows 10: Stay Current
In-Place Upgrade	Traditional Deployment	Provisioning	Traditional Deployment	In-Place Upgrade

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When not to move in-place?

Changing from Windows x86 to x64

~~Changing from legacy BIOS to UEFI~~

Changing between OS languages

Dual boot and multi-boot systems

Systems using Windows To Go, boot from VHD

~~Image creation processes (can't sysprep after upgrade)~~

Using certain third-party disk encryption products

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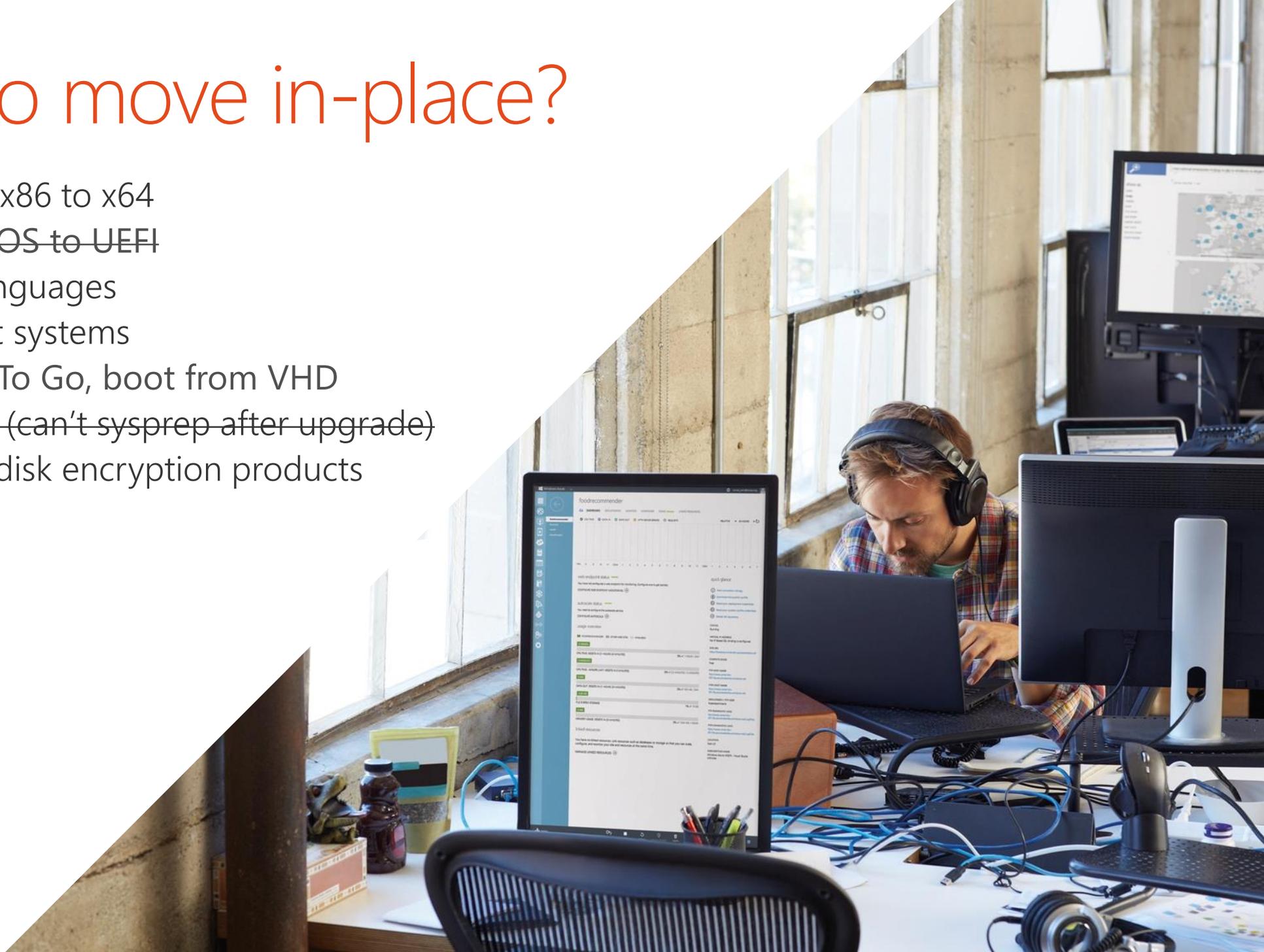
Windows 10 provisioning

- Windows Configuration Designer is tool for transforming Windows 10
  - Provision Windows 10 to comply with company policy
  - Provisioning is targeted for various Windows 10 editions
- Windows Configuration Designer is used to
  - Create provisioning packages to apply settings to Windows 10

Provision desktop devices

Configure common settings for Windows desktop devices

Provision Windows mobile devices

Configure common settings for Windows mobile devices

Advanced provisioning

View and configure all possible settings on provisioned devices

Provision kiosk devices

Configure common settings for a device that will run a single app in kiosk mode

Provision Surface Hub devices

Configure common settings for Surface Hub devices

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What can be provisioned?

Initial Setup	Edition Upgrade	Certificates	Connectivity Profiles
Management Enrollment	Universal Windows Apps	Win32 Applications Scripts	Enterprise Policies
Offline content	Browser Settings	Start Menu Customization	Assigned Access

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Windows 10 security features

Virtualization Based Security	Device Guard		Device Encryption	
UEFI Secure Boot	Microsoft Edge		Windows Information Protection	Security Management[2]
Windows Trusted Boot	Windows Defender	Credential Guard	BitLocker Admin and Monitoring	Conditional Access
Windows Update	Windows Firewall	Windows Hello Companion Devices	BitLocker	Windows Defender Advanced Threat Protection
Trusted Platform Module	SmartScreen	Windows Hello	BitLocker to Go	

Secure your identities	Protect enterprise data	Enhance threat resistance	Secure your devices and connections	Detect, investigate, and respond to breaches

PRE-BREACH —————— POST-BREACH

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Summary

- Windows 10 is last client Windows OS (Windows as a Service)
  - Periodically updated twice per year (feature update)
  - Aligned with Office 365 ProPlus and Configuration Manager
- Creator Update (build 1703) is current Windows 10 version
  - Include many improvements and new features
- Learn about Azure AD and MDM!
- In-place upgrade and Provisioning are modern deployment
- Windows 10 is the most secure Windows ever!

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Additional Information

What's new in Windows 10, version 1703 IT pro content
https://docs.microsoft.com/en-us/windows/whats-new/whats-new-windows-10-version-1703
http://aka.ms/w10-1703-resources

What's new in the Windows 10 Creators Update
https://blogs.windows.com/windowsexperience/2017/04/11/whats-new-in-the-windows-10-creators-update

Quick guide to Windows as a service
https://docs.microsoft.com/en-us/windows/deployment/update/waas-quick-start

Windows 10 Virtual Labs
https://aka.ms/w10virtuallabs

Manage corporate devices
https://docs.microsoft.com/en-us/windows/client-management/manage-corporate-devices

The best Windows ever. Forever.