Windows 10

Windows 10 for Enterprise: Deployment

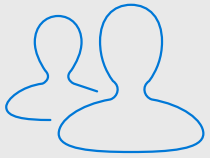
Microsoft

Windows 10

Achieve more and transform your business with the most secure Windows ever.

Safer and
more **secure**

More **productive**

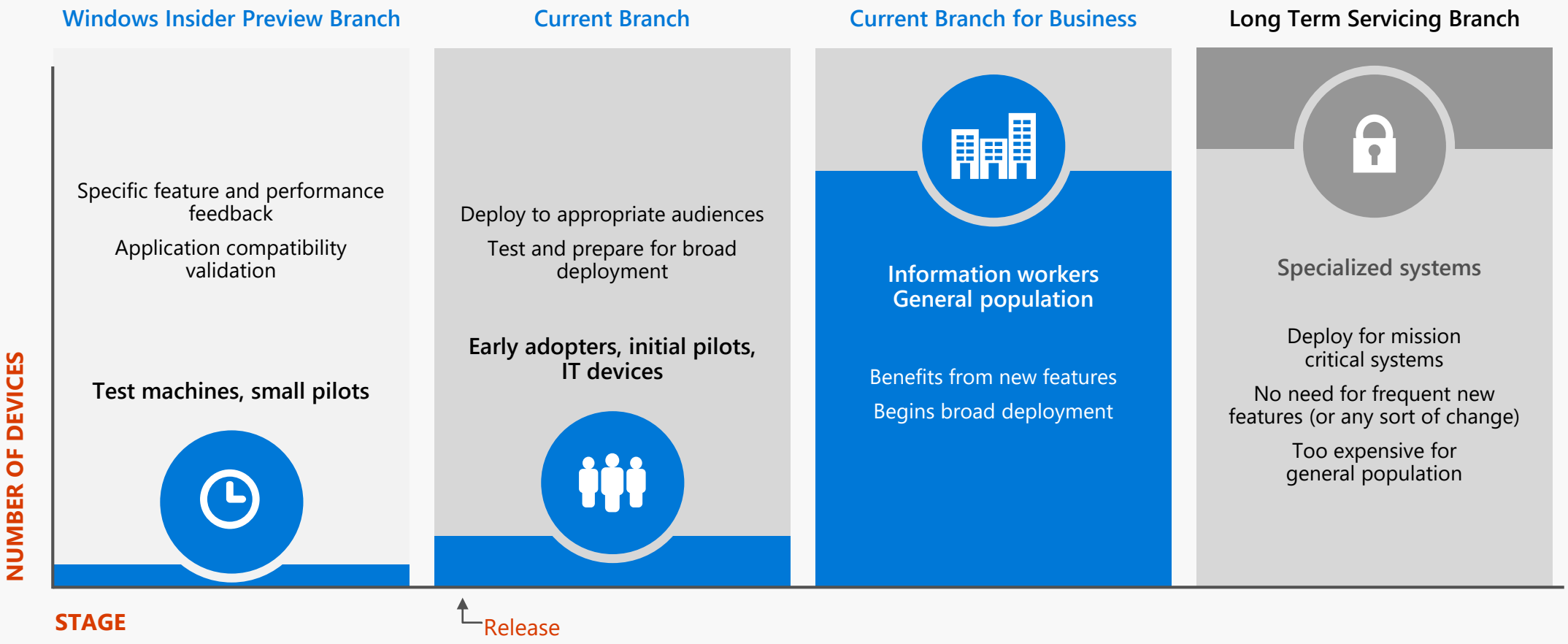


More **personal**

Powerful,
modern devices

Windows as a Service: Deploying Windows

Unmatched flexibility and control, depending on needs



Agenda

Application Compatibility

Windows Deployment Methods

Windows as a Service

Additional Resources

App compatibility

Compatibility in Windows 10

- Compatibility of Windows 7, Windows 8 and Windows 10 desktop apps is a top Microsoft goal.
- Most existing Win32 and Win64 applications run reliably on Windows 10 without any changes.
- Strong compatibility and support for Web apps and devices.

Desktop apps

Organizations are observing compatibility rates above 99%

High compatibility achieved through:

- Minimal changes to Win32 APIs
- Insider feedback during development
- Telemetry

Modern apps

High compatibility achieved through:

- Validation of Windows Store apps
- Insider feedback during development
- Telemetry

Significant investments, enhancements in each release

Web sites

Internet Explorer 11 included (unchanged) for backwards compatibility

New Microsoft Edge browser for modern HTML5-based web sites

Enterprise Mode features to ensure proper use

Hardware

Windows 10 supports all devices capable of running Windows 7 and above

Identical hardware minimum requirements as Windows 7

Strong driver compatibility, with updates delivered as needed through Windows Update

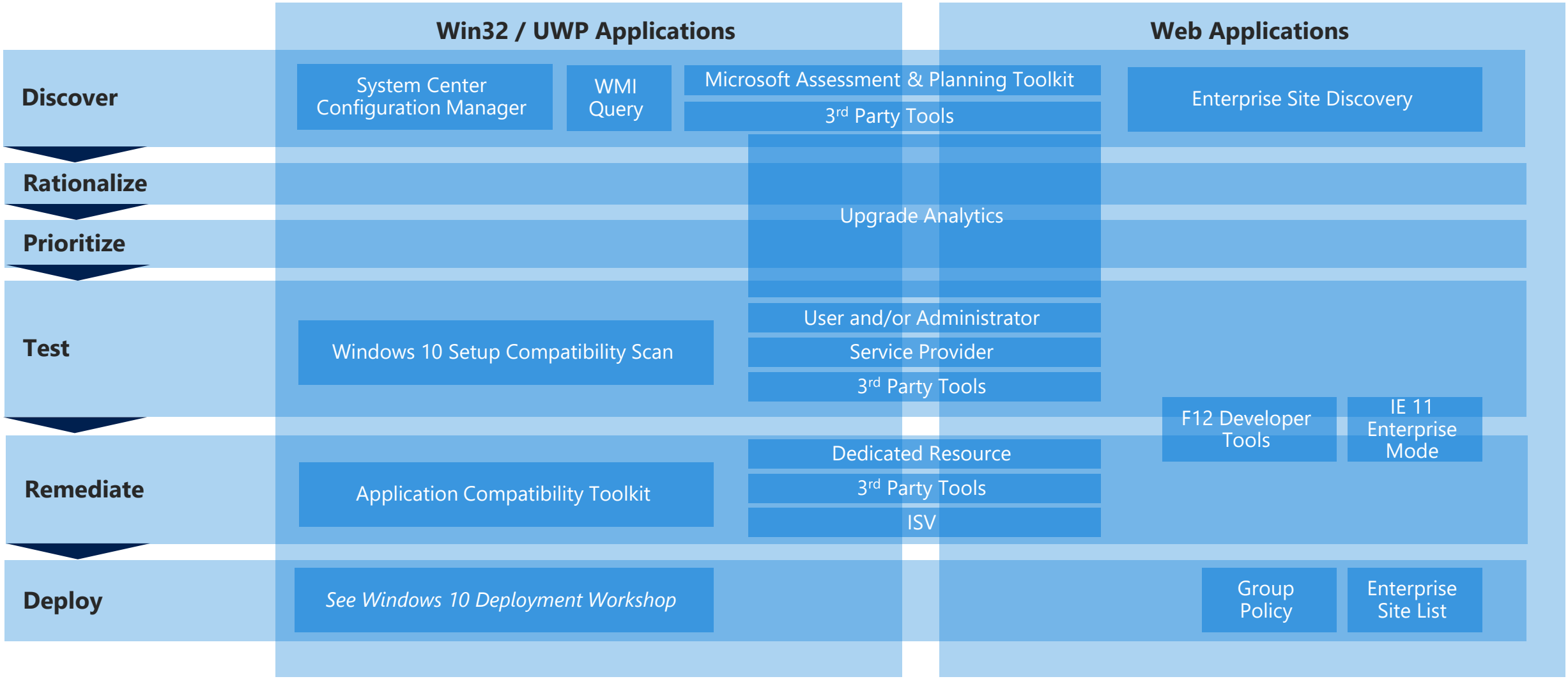
Application Compatibility

Overview	**Applications & web applications traditionally the largest blocker to move towards a new operating system**
Challenges	**How to approach discovery / rationalization / prioritization** ▪ What applications are owned / used ▪ What applications can be tested **App testing** ▪ Approach ▪ Integration with other applications ▪ Finding test contacts **Selecting the right tools and process to support application compatibility**

Application Compatibility for OS Transformation Projects

	Win32 / UWP Applications	Web Applications
Discover	What applications does my company rely on?	What web applications does my company rely on?
Rationalize	What should I test	What should I test
Prioritize	When and how should I test	When and how should I test
Test	Validate application	Validate web application
Remediate	Determine remediation approach	Determine site/ browser configuration required for remediation
Deploy	Deploy application in production	Deploy site or browser configuration in production

Overview


Win32 / UWP Applications
Web Applications
Discover
System Center Configuration Manager
WMI Query
Microsoft Assessment & Planning Toolkit
3rd Party Tools
Enterprise Site Discovery
Rationalize
Prioritize
Upgrade Analytics
Test
Windows 10 Setup Compatibility Scan
User and/or Administrator
Service Provider
3rd Party Tools
F12 Developer Tools
IE 11 Enterprise Mode
Remediate
Application Compatibility Toolkit
Dedicated Resource
3rd Party Tools
ISV
Deploy
See Windows 10 Deployment Workshop
Group Policy
Enterprise Site List

Application Compatibility Tools

Discover	**Microsoft Assessment and Planning Toolkit** ▪ Provide inventory, assessment, and reporting services to simplify the migration planning process to Windows 10 **System Center Configuration Manager** ▪ Leverage existing software inventory and asset intelligence capabilities for discovery information
Test	**Setup Compat Scan** ▪ Perform readiness assessment on existing Operating System ▪ Checks hardware, power requirements and compatibility for installed applications and devices ▪ Use SETUP.EXE /Auto Upgrade /Compat ScanOnly /Quiet ▪ Full media needs to be downloaded to device where the assessment is performed ▪ Check the return codes, XML files
Remediate	**Microsoft Application Compatibility Toolkit** ▪ Installed with the Windows Assessment & Deployment Kit ▪ Create custom short term compatibility fixes for applications ▪ Not recommended for long term compatibility fixes

Discover & Rationalize

1 Prepare Your Environment

- Upgrade overview
- Run a pilot
- Prioritize your applications

2 Resolve Issues

- Review applications with known issues
- Review applications with no known issues
- Review Drivers with known issues

3 Deploy

- Deploy Windows to those devices that have had compatibility issues resolved

Upgrade Analytics

Microsoft cloud service that allows enterprise IT to quickly identify and focus on the critical issues impeding upgrades; provides data driven tools to plan and manage the upgrade process end to end

Discover & Rationalize	▪ Leverages Windows telemetry for rapid data collection ▪ Applications, usage, device and device driver inventory ▪ Data-driven rationalization based on install base and usage
Resolve Issues & Assess Apps	▪ Integration with Microsoft compatibility data to determine compatibility ▪ As Microsoft publishes compatibility information based on investigations and ISV information, Upgrade Analytics has access to the data ▪ Issue resolution guidance where available
Deploy	▪ Identify computers eligible for deployment ▪ Report on overall deployment progress

Pre-Requisites

Cloud Service

- Azure Operations Management Suite (OMS) provides a reporting interface
- OMS account may be created using a Microsoft Account or Azure Active Directory account
- OMS dynamically generates a COMMERCIAL ID that is unique to your organization
- Data sent to Microsoft will be tagged with the commercial ID to present only your information in OMS

Client Configuration

- Reg key configuration to send data to Microsoft for analysis
  - Proxy/firewall configuration may be required to allow data to flow to Microsoft
  - Microsoft Privacy Statement - https://privacy.microsoft.com/en-us/privacystatement
- Management/GPO may be used to configure CEIP and set commercial ID on participating systems
- Install client compatibility analysis tools/KBs and restart

Required KBs

Operating System	Required KB
Windows 7 RTM	KB2977759
Windows 7 SP1	KB2952664
Windows 8 RTM	KB2976978
Windows 8.1	KB2976978

DEMO

Windows Upgrade Analytics Service

Getting Started with Upgrade Analytics

1 Network

- Device telemetry must be able to leave the system and the network
- Data is transmitted to Microsoft servers
- Telemetry is sent as Local System – ensure that proxy servers allow this method of internet access

2 OMS Setup

- Signup at: aka.ms/omsregister
- Microsoft Account or Azure AD Credentials may be used
- If required, create your own workspace

3 Solution Config

- From the Solutions Gallery, add the Upgrade Analytics solution to the workspace
- In Settings, select Connected Sources. Find the Windows Telemetry panel
- Generate a Commercial ID Key. This is the key that is used to identify all data from your organization

4 System Config

- MDM/GPO may be used to configure Windows client systems that will participate in telemetry
- Applies the Commercial ID Key to the registry
- Data sent by the system contains the commercial ID to allow your data to be accessible by the Upgrade Analytics Solution

Application Test & Remediation Approach

Approach and Tooling

Discover

- Select target groups / users
- Collect information ahead of project
- Determine managed and supported applications
- Use Upgrade Analytics to obtain information

Test

- Use Setup compat scan on Windows 7/8.1 device with managed/supported applications installed
- Select pilot groups / users based on discovery information
- Select virtual or physical test platform
- Involve service desk representatives

Remediate

- Determine remediation approach for each application
- Favor long term fixes over band-aid solutions
- Track and document environment changes to support application

Deploy

- Deploy Windows 10 with confidence
- Develop a strategy to maintain application compatibility with Windows as a Service

Application Readiness Resources

Application Compatibility

Windows Insider Program

Join the Windows Insiders Program community to help shape the future of Windows, get early releases and more.

Download a preview build of the latest Windows SDK and Emulator to explore what's new in building apps. for Windows.

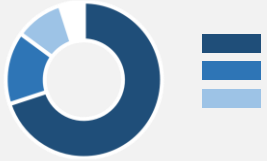
Windows 10 Cookbook

Leverage the Application Compatibility Cookbook for guidance in verifying compatibility of existing and planned apps. for Windows 10.

Download the Application Compatibility Cookbook for Windows 10.

Find Supported Apps

Windows Upgrade Analytics



identify critical issues impeding upgrades; data insights to plan and manage the upgrade process end to end

Sign up for Windows Upgrade Analytics and begin evaluating your environment.

Ready For Windows

Look for a list of compatible apps in Microsoft's global Ready for Windows Directory available for IT decision makers around the world.

Submit your compatible application to the Ready for Windows Directory.

Modernize

Desktop Bridge

Use the Desktop Bridge or build UWP to bring your existing desktop apps to the Universal Windows Platform

Download Desktop Application Converter to make your applications available in the Windows Store.

Servicing

WaaS Servicing

Adopt the new Windows Servicing model for app development and testing of internally developed custom apps.

Implement new practices in your organization and adopt best practices to optimize app development and management costs.

Web Supportability

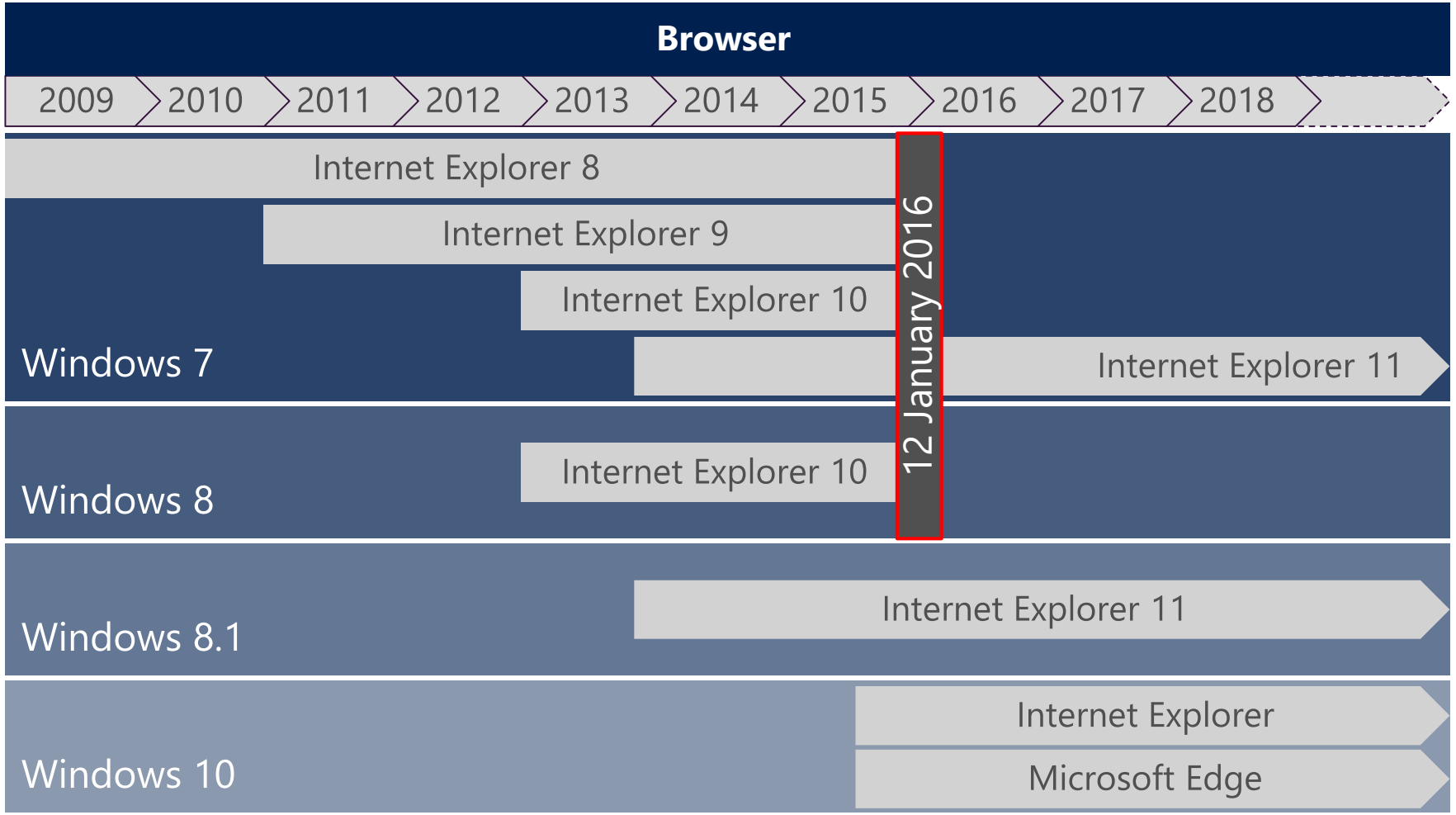
Applications

Windows 10 ISV application support

- Will vary by application
- May vary by branch
  - Current Branch
  - Current Branch for Business
  - Long Term Servicing Branch

LOB application support

- Consider UWP to extend application functionality on Windows 10

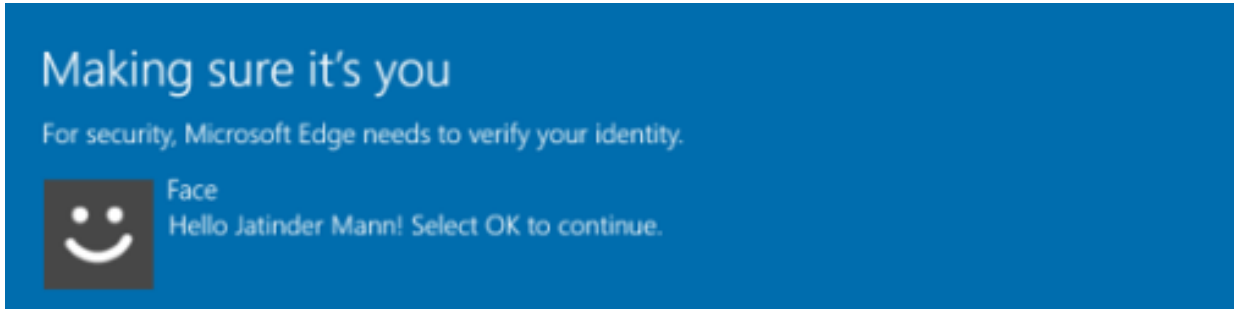


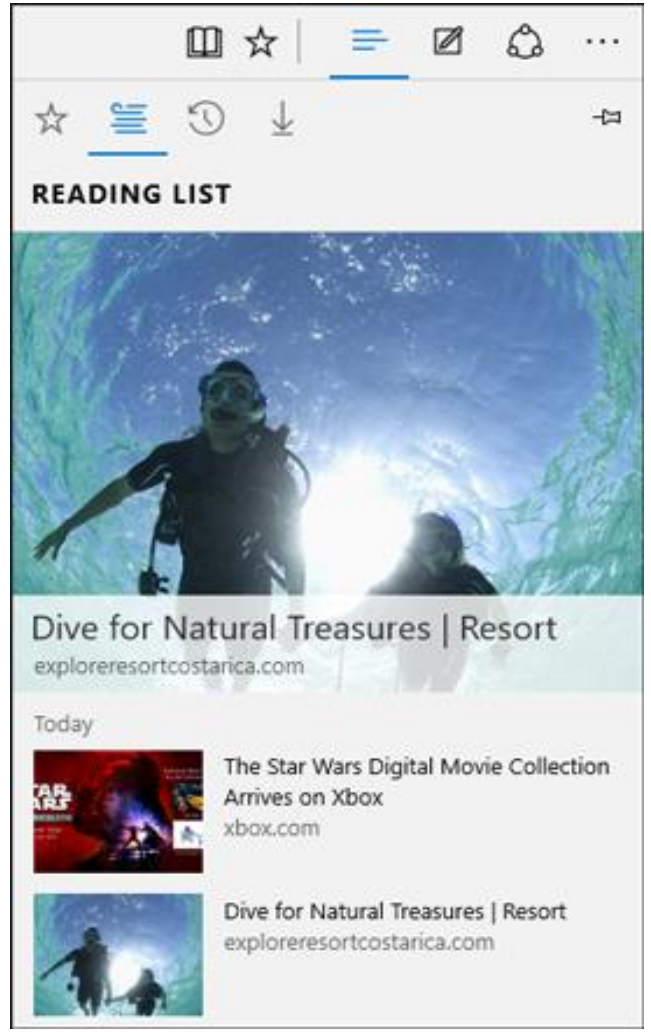
What's New

Microsoft Edge

Overview

- Support for the Modern Web
- Integrated with Cortana
- Ink directly on the web page
- Reading list and reading view
- Built in PDF viewer and Tab Preview
- Browser extensions
- Biometric support with Windows Hello



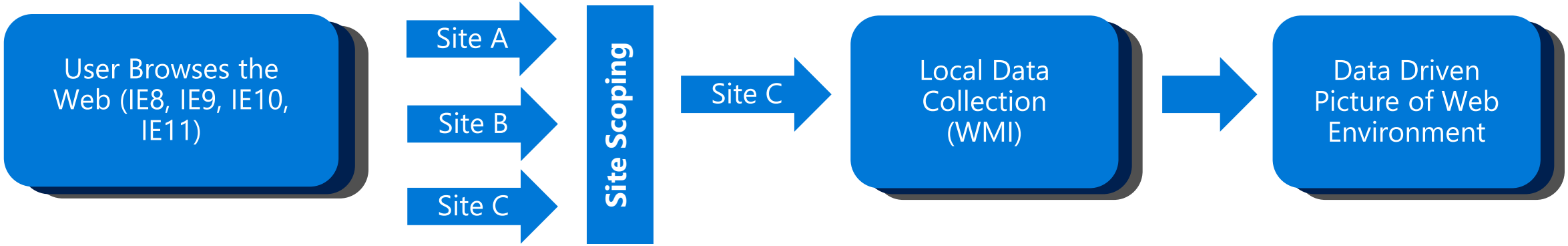


Web Application Compatibility Tools

Discover	**Enterprise Site Discovery** ▪ Use Internet Explorer to collect data on computers running Windows Internet Explorer 8 through Internet Explorer 11 on Windows 7/8.1/10
Remediate	**F12 Developer Tools** ▪ Debug websites to address compatibility problems **IE11 Enterprise Mode** ▪ Compatibility mode that's designed to emulate either Windows Internet Explorer 7 or Windows Internet Explorer 8
Deploy	**Enterprise Site List** ▪ Enterprise Mode configuration settings to users to enable rendering of websites in compatibility mode **Group Policy** ▪ Deploys the enterprise site list to specified computers

Enterprise Site Discovery

Overview	▪ Provides IT Pros with clearer picture about how IE is being used in their deployment based on actual user data. ▪ Works with Internet Explorer 8, 9, 10 and 11
Purpose	▪ Understand what web applications are being used and what websites are being accessed ▪ Determine the add-ons required for each web application and website
Requirements	▪ Works with Internet Explorer 8, 9, 10 and 11 on Windows 7 or Windows 8.1 ▪ Installed via PowerShell ▪ Managed by PowerShell or Group Policy



Enterprise Mode

Overview

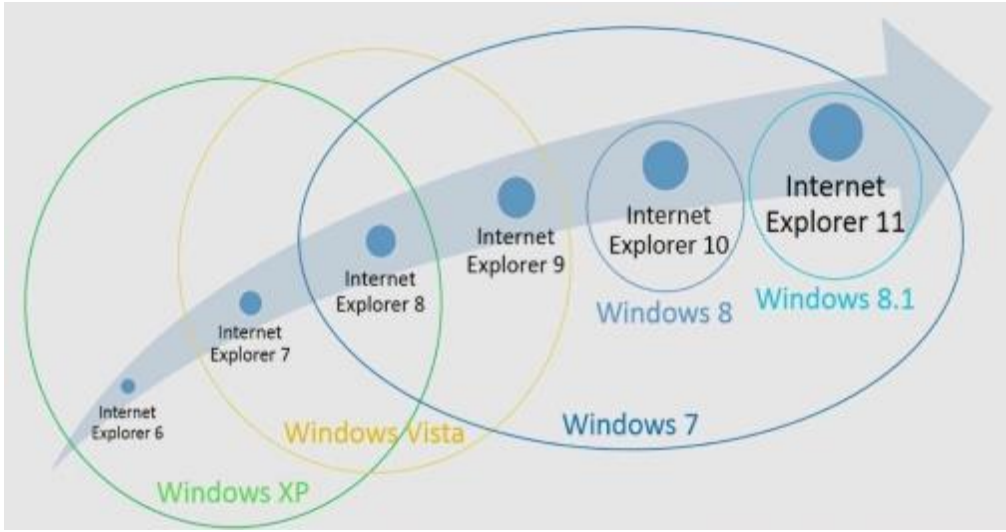
- Enterprise Mode is a compatibility mode in Internet Explorer 11 that can emulate Internet Explorer 7, Internet Explorer 8, and other Internet Explorer document modes.
- Enterprise Mode is designed to avoid the common compatibility problems associated with web apps written and tested on older versions of Internet Explorer.
- In Windows 10, Enterprise Mode Site List can be set to open sites in Internet Explorer 11 if attempted to be viewed in Microsoft Edge, allowing the modern browser to be left as the default choice.

Requirements

- Windows 10
- Windows 8.1
- Windows 7 Service Pack 1

Features

- Improved web app and website compatibility
- Tool-based management for website lists
- Centralized control
- Integrated browsing
- Data gathering
- Supported until Jan 14 2020



Browser Interoperability

Overview

- Microsoft Edge and Internet Explorer 11 are designed to operate in conjunction to give the best experience for web browsing in Windows 10.
- Administrators can define interoperability between browsers for managed devices

Option	User Experience	Administrative Effort
▪ All websites open in Microsoft Edge (Default)	▪ Users needs to manually open Internet Explorer 11 if a site fails to operate correctly.	▪ Nil – default configuration ▪ Critical intranet sites to be tested on Microsoft Edge to confirm operability
▪ Websites open in Microsoft Edge unless Internet Explorer 11 is defined by an administrator (Recommended) .	▪ No user interaction required to switch to Internet Explorer 11 for sites with known issues ▪ Interstitial page will be removed by default in Windows 10 1607	▪ Moderate - List creation and management overhead ▪ Users can provide feedback using Enterprise Site Discovery tool to reduce administrative effort
▪ All websites open in Internet Explorer 11. (Not Recommended)	▪ Single browser for all sites ▪ Sites may not display correctly	▪ Low – Setting implemented via Group Policy

Web Application Test & Remediation Approach

Technical Approach and Tooling

Discover

- Use the Enterprise Site Discovery Toolkit on IE8/9/10 (11 if needed)
- Select target groups / users
- Collect information monthly
- Determine critical LoB applications

Test

- Use IE11 on Windows 7 / 8.1 / to test critical LoB web applications
- Select pilot groups / users
- Test using Enterprise Mode
- Confirm add-on compatibility

Remediate

- Determine compatibility for each web application using assessment information / F12 Developer tool
- Create & configure Enterprise Mode site lists
- Modify websites where required

Deploy

- Deploy IE 11 with confidence to Windows 7/8.1
- Deploy Windows 10 with confidence
- Develop a strategy to move web applications away from Enterprise Mode reliance

Controlled Approach – Windows 7 / 8.1 users on IE 8-11

Dynamic Approach – For Windows XP / Vista users & Windows 7 / 8.1 users on IE 8-11

Windows Deployment

Overview

Choices

Tools

Recommendations

Deployment Choices

Wipe-and-Load

Traditional process

- Capture data and settings
- Deploy (custom) OS image
- Inject drivers
- Install apps
- Restore data and settings

Still an option for all scenarios

In-Place

Let Windows do the work

- Preserve all data, settings, apps, drivers
- Install (standard) OS image
- Restore everything

Recommended for existing devices (Windows 7/8/8.1)

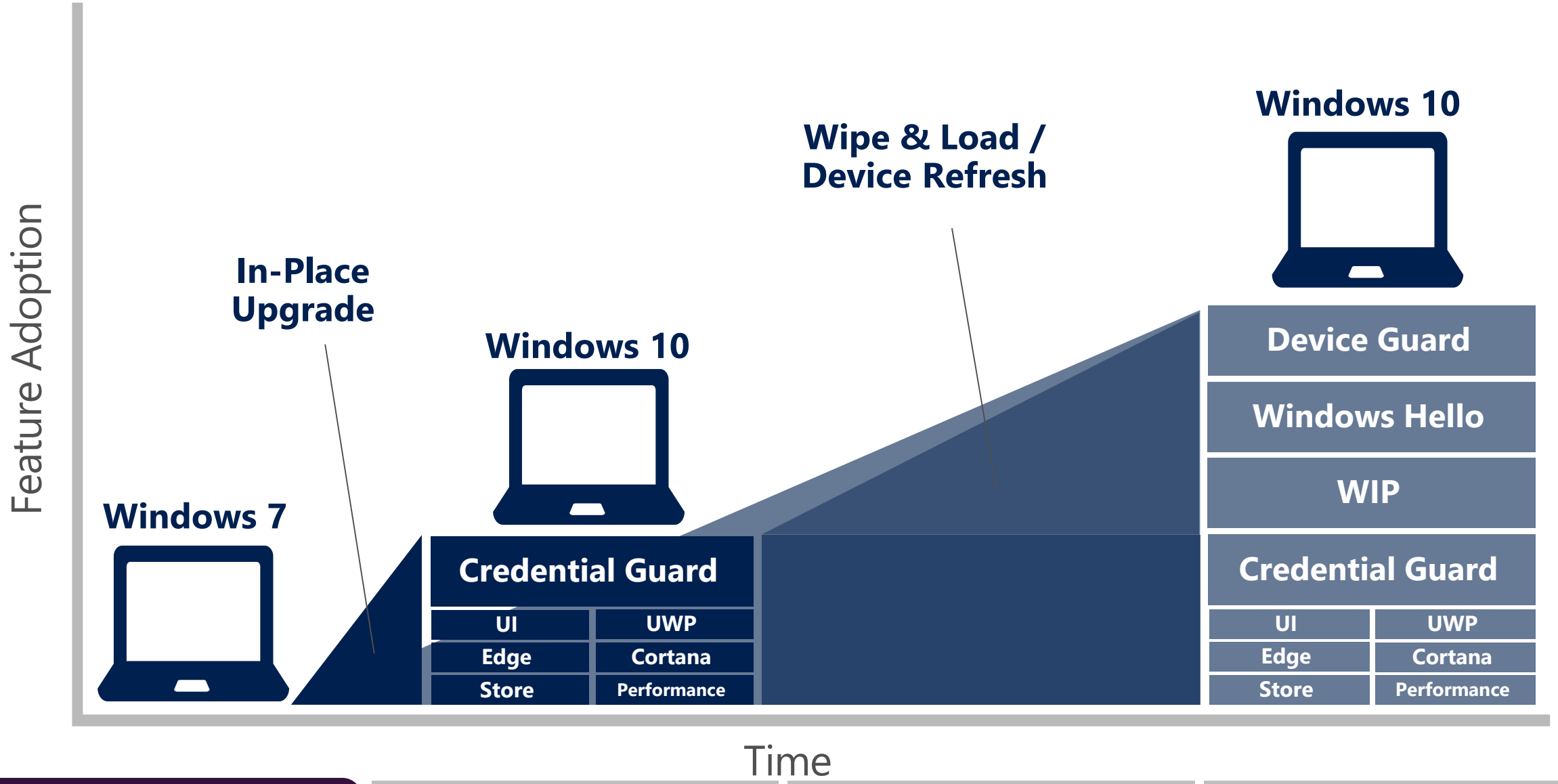
Provisioning

Configure new devices

- Transform into an Enterprise device
- Remove extra items, add organizational apps and config

New capability for new devices

Transformation Choices



Transformation Effort

	Refresh	Replace	Upgrade
Pre-Reqs	▪ Assessing systems requires time ▪ Extent of assessment depends on approach ▪ Upgrade required infrastructure to support Windows 10		
Engineer	▪ Image must be designed ▪ Finalized when compat information is known	▪ Image must be designed ▪ Finalized when compat information is known ▪ Remote data migration solution	▪ No image or data migration solution required
Deploy	▪ Image is typically larger than Microsoft media	▪ Image is typically larger than Microsoft media	▪ Smallest media is from Microsoft
Post-Install	▪ All app installers must be compatible with Windows 10 for re-install	▪ All app installers must be compatible with Windows 10 for re-install ▪ User data must be restored from remote repository	▪ Only apps determined to require re-installation must have compatible installers ▪ Compatible/non-blocking apps are migrated
Rollback	▪ No rollback ▪ Re-deploy old OS and re-configure system	▪ Revert to old machine ▪ Data on old system becomes increasing stale	▪ Built-in rollback for ~ 1 month ▪ Data on old system becomes increasing stale
Duration	▪ Fast	▪ Slow	▪ Faster

Deploying Windows 10

New Device → Bare Metal (Custom Image)

Existing Device

Device Considerations	Operating System Considerations	Application Considerations	In-Place Upgrade
▪ BIOS → UEFI ▪ Disk partitioning ▪ WinPE Offline Operation ▪ 3rd party disk encryption*	▪ Architecture (x86 → x64) ▪ Base OS language ▪ Domain ▪ Local Administrators ▪ Configuration drift ▪ Moving from XP or Vista ▪ Custom base image	▪ Bulk app change	Upgrade key apps as needed post OS update

Refresh (Wipe & Load)
Re-install the operating system (Custom Image)
Install applications
Migrate user state

Windows Tooling & Deployment Capabilities

Overview

When choosing a Windows Client Platform delivery tool, System Center Configuration Manager and Microsoft Deployment Toolkit are options. See below for the feature comparison.

Capability	Microsoft Deployment Toolkit	System Center 2012 Configuration Manager (R2 SP1, SP2)	System Center Configuration Manager (Current Branch 1606)
Windows 10 Version Support	1507, 1511, 1607	1507, 1511	1507, 1511, 1607
Deploy UEFI/BIOS Platforms	X	X	X
Deploy applications during Task Sequence	X	X	X
Supports Image Creation	X	X	X
Lite Touch Deployment	X	X	X
Zero Touch Deployment		X	X
Manage a wide range of platforms		X	X
Increased Scalability (PXE, etc.)		X	X
Offline Image Servicing		X	X
Deploy Windows-to-Go		X	X
In-Place Upgrade		Task Sequence	Servicing

Image

Architecture

Edition

Strategy

Branding

Security

Architecture

	Advantages	Disadvantages
64-bit Operating System (Recommended)	▪ Single image architecture support ▪ Fewer deployment objects to support ▪ Simple driver support ▪ Reduced engineering support due to single architecture policy	▪ No 16-Bit application support ▪ No x86 device support (e.g. legacy and tablet devices) ▪ Authentication applications (e.g. GINA, biometric) support
32-bit Operating System	▪ Legacy device drivers likely to function ▪ Allows for increased device compatibility ▪ Better support for machines with older hardware specifications ▪ Same Compatibility options as Previous OS's	▪ When multiple images are used, the Image Creation Service must support multiple image engineering, deployment and test scenarios ▪ Devices limited to 4GB RAM

Strategy

Image Strategy	Thin Image	Hybrid Image	Thick Image
Windows Updates	X	X	X
Windows Features	X	X	X
Common Frameworks	X	X	X
Common Productivity Apps		X	X
LOB used by Every Employee		X	X
Frequently Updated Frameworks			X
LOB Applications			X

Considerations

- Image revisions to support component and application updates
- Device deployment time
- Windows 10 1607 provides support for Sysprep via Windows as a Service, although image recreation is still the recommended approach

Security

Overview	▪ Group Policy Objects are commonly used to manage connected machines in a Active Directory Domain Services environment ▪ A similar object called a Local Group Policy object can be used to “stamp” the image with settings
Use Cases	Local Group Policy Objects should be used in the following scenarios: ▪ When a machine does not join an active directory domain ▪ When security settings are required by the business to be implemented ahead of a domain join
Disadvantages	The settings that are configured in Local Policy Objects will need to be countermanded in Group Policy should they need to be supersede. This can cause a complicated Administrative scenario, leading to unnecessary GPO’s, and the possibility for misconfigured systems
Recommendation	**Apply policies using group policy (where possible) to reduce the number of changes required to the core image**

Wipe & Load

Overview

Methods

User State Migration

Platform Configuration

Driver Management

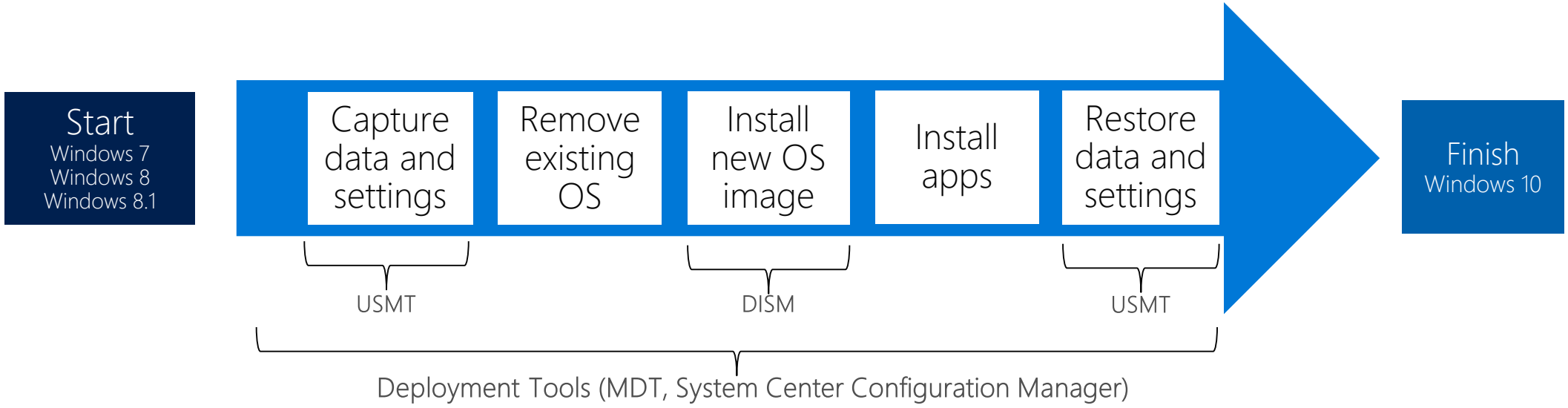
Recommendations

Wipe & Load Overview

Minimal changes to existing process

- Familiar with enterprises
- Out of the box support with Windows 7, Windows 8, and Windows 8.1
- Customized approach required to move from Windows XP/Vista to Windows 10
- Use System Center Configuration Manager or MDT for managing the process – requires update
- Administrator to configure preservation of existing apps, settings, and drivers

Wipe & Load (Refresh) Process



Deployment Methods

Deployment	Tools		Advantages	Scenarios
Offline Deployment	System Center Configuration Manager	Microsoft Deployment Toolkit	▪ No infrastructure required to deploy ▪ Support Challenges ▪ Challenging to maintain versioning	▪ Remote offices ▪ Limited network connectivity
Lite touch Deployment (LTI)			▪ Less engineering time than ZTI ▪ Requires interaction to initiate the deployment process ▪ Varied levels of automation supported	▪ Windows 10 Pilot ▪ Interactive deployment capability
Zero Touch Deployment (ZTI)			▪ Requires the most engineering time ▪ No user interaction required to initiate deployment ▪ 100% automation	▪ Organizations requiring high volume deployment capability

User State Migration

Overview	User state migration preserves user generated content, the user's customized experience of Windows, and application settings within the constraints of operating system and application compatibility
Supported Versions	Customers moving from earlier versions of Windows may choose to move to an intermediate Operating System version to allow full USMT support

	Windows Vista	Windows 7	Windows 8	Windows 8.1	Windows 10
Windows Vista	4.0	4.0, 5.0	5.0		
Windows 7		4.0, 5.0, 6.3	5.0, 6.3	6.3	Supported
Windows 8			5.0, 6.3	6.3	Supported
Windows 8.1				6.3	Supported
Windows 10				Supported	Supported

Platform Configuration

			Device Examples
Firmware	**BIOS**	▪ Flexible Deployment Media Support ▪ All legacy deployment methods still apply ▪ Maintain a single boot image	Devices purchased over 4 years ago
	UEFI (Recommended)	▪ Allows firmware to implement security policy ▪ Secure boot ▪ Faster boot times ▪ Latest UEFI Version required for compliance with Windows 10 Baseline and some features	Devices purchased within 4 years
Consideration		*Moving between UEFI and BIOS configurations is not currently supported through refresh scenario. The only supported way to move from UEFI to BIOS is through a **BARE METAL** (new device) deployment scenario, using PXE to boot into the device.*	

Driver Management

Option	Benefits	Limitations
Auto-Apply Drivers	▪ Easy to setup and maintain. ▪ Driver to client device matching 'just works'	▪ Less control over drivers chosen – first driver wins. ▪ If a problem occurs, troubleshooting is more difficult.
Apply Driver Packages (Recommended)	▪ Administrator can specify the exact driver for a particular make and model of client device. ▪ More control over each client device	▪ Additional up-front configuration and maintenance required.

Recommendations

Consider wipe & load when…

Configuration Drift / Change	Fundamental Change	Custom Requirements
▪ Domain membership ▪ Local Administrators ▪ Bulk application swap	▪ Moving from Windows XP or Windows Vista ▪ Disk partitioning ▪ BIOS -> UEFI ▪ x86 -> x64 ▪ Base OS language	▪ WinPE offline operation ▪ Custom base image ▪ 3rd party disk encryption

In-Place Upgrade

Overview

Upgrade Process

Upgrade vs Refresh

Recovery & Troubleshooting

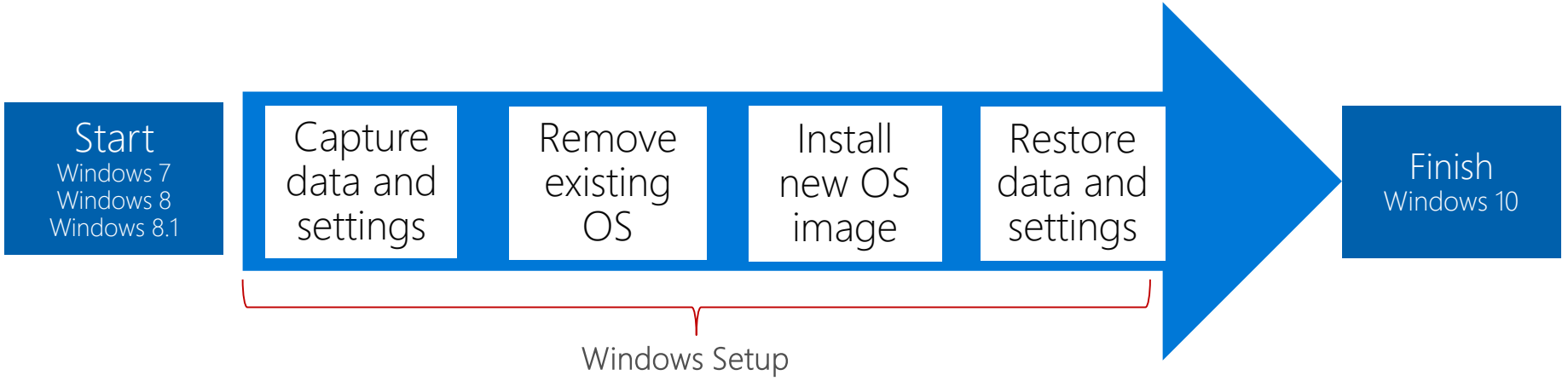
Prepare

Overview

Preferred Option for Enterprises

- Supported with Windows 7, Windows 8, and Windows 8.1
- Supported to upgrade Windows 10 1507 to 1511 and beyond
- Consumers use Windows Update, but enterprises want more control
- Use System Center Configuration Manager or MDT for managing the process
- Uses the standard Windows 10 image
- Automatically preserves existing apps, settings, and drivers
- Proven process - popular for Windows 8 to Windows 8.1 upgrade

In-Place Upgrade Process



Upgrade process -The Four Primary Phases

1 Down-level

Running Windows 7, 8, 8.1, 10

Check the system

Inventory Applications

Inventory Drivers

Assess compatibility

Prepare WinRE

2 Windows PE

Minimalist OS

Both new & old are offline

Backup down-level OS

Lay down new OS

Prepare new OS

Inject drivers

Some Migration

3 1st boot to new OS

Binding the new yoke

Specialize to the machine

Install drivers

Migrate Apps

More Migration

4 2nd boot to new OS

Finalize Upgrade

Welcome the user back

OOBE (skip if Win10 to another)

Ready **Set** **Go** **Welcome to Windows**

Upgrade vs Refresh

Why Upgrade?

- **Preserve applications, drivers, user data and settings -** Reduce upfront testing and deployment preparation
- **Compared to refresh, upgrade is…**
  - Faster – 30 to 60 minutes, on average, to upgrade
  - Smaller – file size is just the default OS media, no applications
  - More robust – "bulletproof" rollback on failure to functional down level system
- **Zero ADK dependencies**
- **Use it to supplement existing deployment scenarios -** Refresh, replace, and bare metal

Considerations

- **Compatibility with 3rd Party Disk Encryption tools** (BitLocker supported) – *Improved support for 3rd Party Disk Encryption with Windows 10 1607*
- **Upgrade process can be tested with pre-validation checks**
  - Trial run can be performed with Windows 10 Media using "/Compat ScanOnly" switch

Prepare for In-Place Upgrade

Perform a Pre-Validation Check

Use Windows 10 media to assess system readiness

Disk Encryption Compatibility

Check disk encryption technology support (if required)

Understand 3rd party ISV plans to support In-Place Upgrade approach

Work with Microsoft to address blockers

Plan Pilot Approach

Define success criteria

- Critical LoB and Web apps tested
- User Experience
- Group Policy / management configuration updates required

Plan for Content Distribution

Windows 10 Upgrade package size approximately 3.8Gb

Plan for content delivery to large, medium and branch sites

Utilize content caching technologies where required

Provisioning

Provisioning

Recommendations

Provisioning

Overview

Take off-the-shelf hardware

Transform with little or no user interaction

Device is ready for use

User led provisioning

For company owned devices

- Azure AD Join – during OOBE or after from settings panel

For BYOD

- “Add a work account” for device registration

Automatic MDM enrollment and policy push:

- Change Windows SKU, apply settings, install applications

IT led provisioning

Create provisioning packages with WICD and apply settings

- Change Windows SKU, apply settings, install applications, install and apply updates
- Enroll a device for ongoing management
- Deploy manually, add to images

Provisioning

Approach

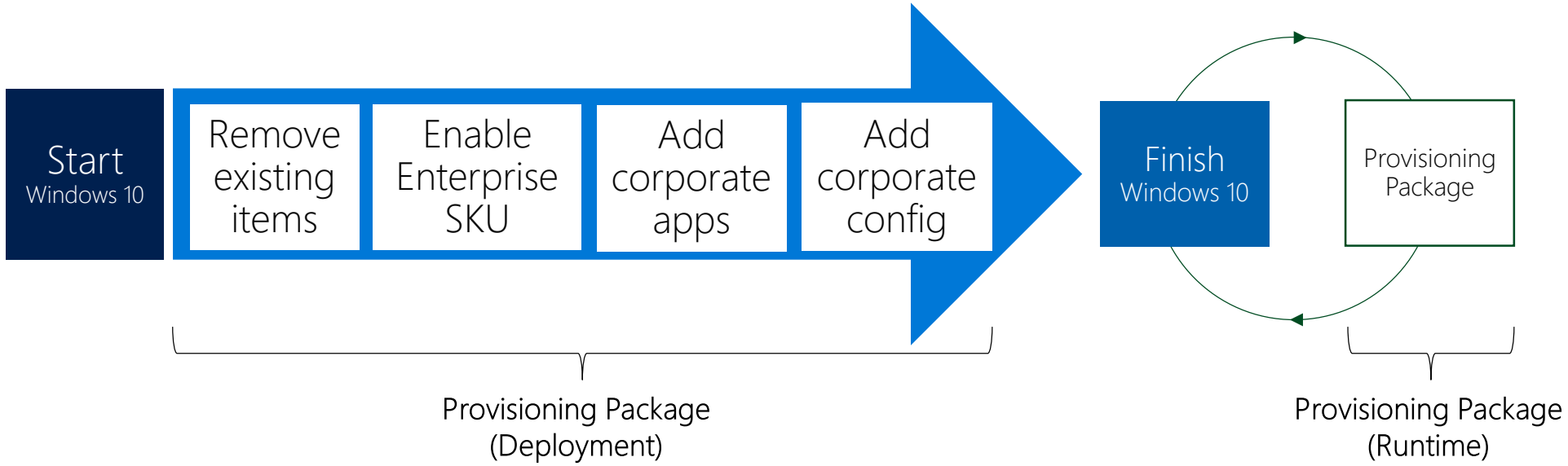
Flexible Methods

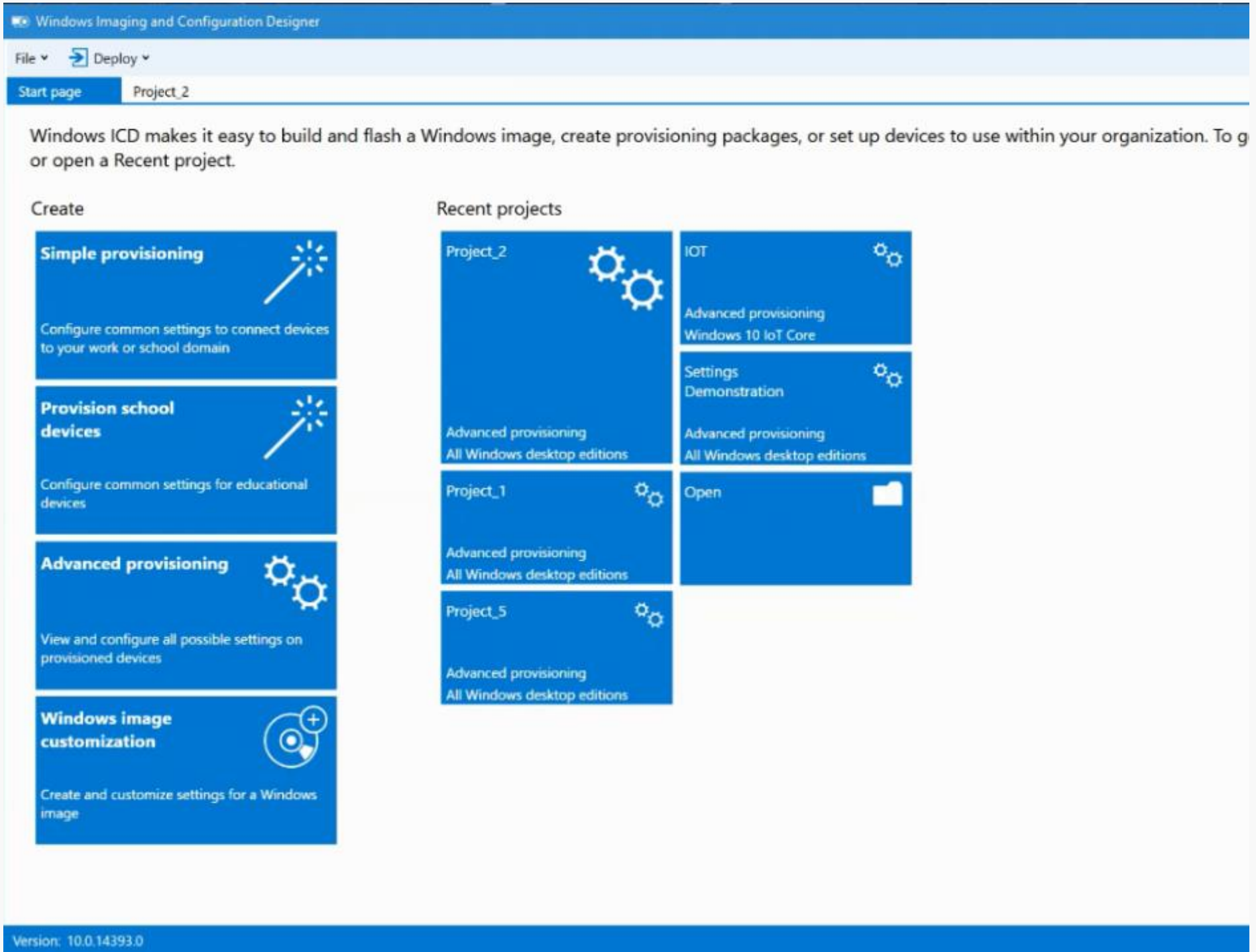
- Using media, USB tethering, or even e-mail for manual distribution
- Automatically trigged from the cloud or connection to a corporate network
- Leverage NFC or QR codes

Transform a Device

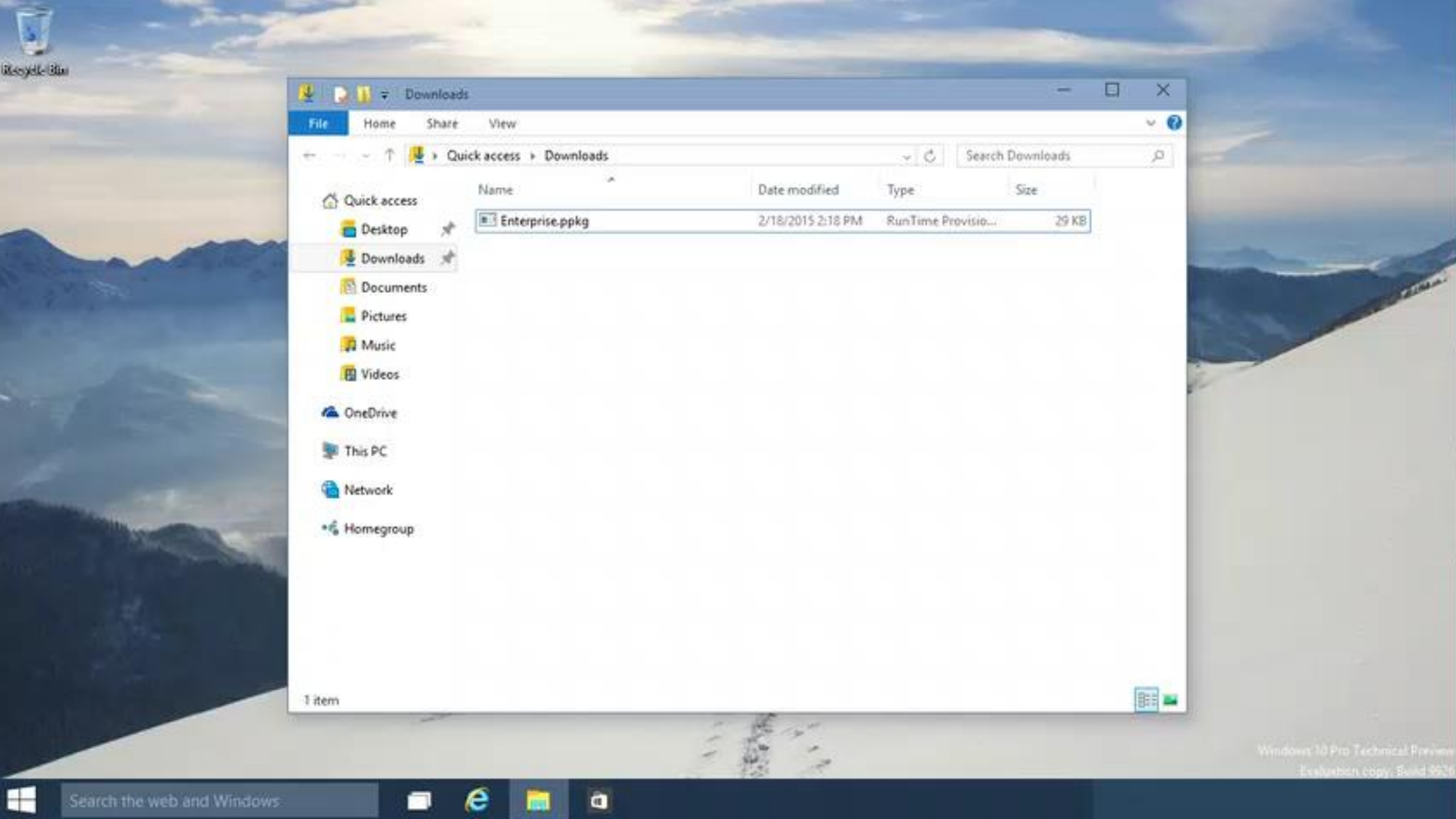
- Enable the Enterprise SKU
- Install apps and enterprise configuration
- Enroll the device to be managed via MDM

Provisioning Process





WINDOWS IN ACTION


Recycle Bin
Downloads
File
Home
Share
View
Quick access
Downloads
Search Downloads
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
OneDrive
This PC
Network
Homegroup
Name
Date modified
Type
Size
Enterprise.ppkg
2/18/2015 2:18 PM
RunTime Provisio...
29 KB
1 item
Search the web and Windows
Windows 10 Pro Technical Preview
Evaluation copy. Build 9926

Windows as a Service

Overview

Why Windows as a Service (WaaS)?

Introducing WaaS

Becoming Agile with Microsoft

Windows | Office | Windows Server | Microsoft Azure | Microsoft System Center

Delivering new value, features and capabilities on a faster cadence

Deeply integrating cloud services, both to add functionality and to simplify the process of staying current

Providing unmatched flexibility and control

Continually improving security, reliability, and performance

Simplifying deployment and management

Challenges with remaining current before Windows 10

Customer Complexity & Cost

- Individual servicing patches
- Expensive deployment & auditing

Ecosystem

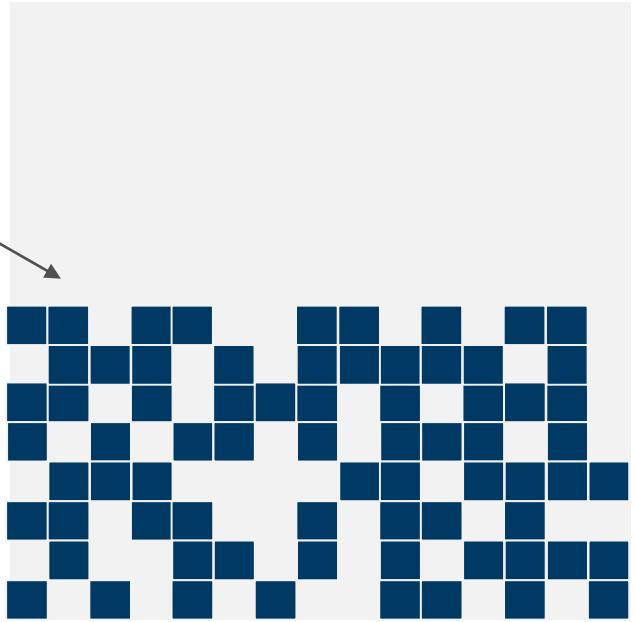
- Platform fragmentation
- Inconsistent approach to patching

Reduced Quality

- Not running what Microsoft tested
- No consistency in the ecosystem

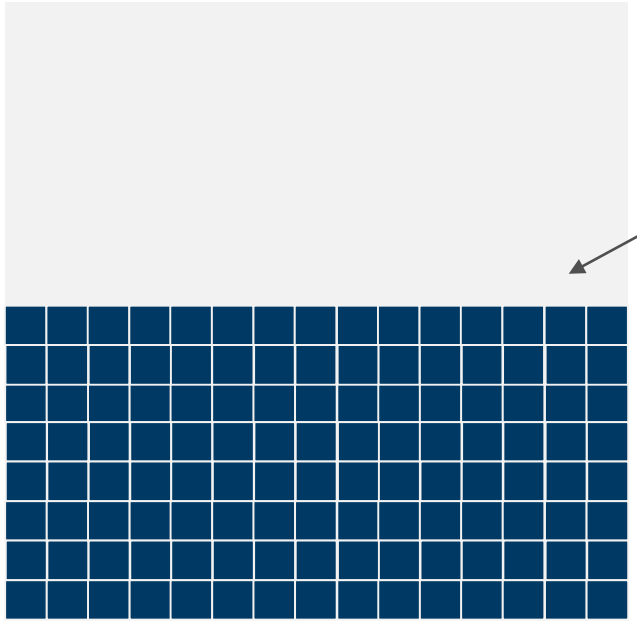
Traditional Enterprise Servicing of Windows

What customers are running



Typical Windows 7 PC: Selectively Patched

What Microsoft is testing



Windows 7 Test Lab PC: Fully Patched

Traditional Enterprise Servicing of Windows

Microsoft Update Release

- Monthly update release ("Patch Tuesday")
- Innovation delivered at Service Pack
- Long service pack release cycle
- Long vNext cycle

Corporate Deployment

- Selective deployment of updates
- Selectivity justified by AppCompat, bandwidth, others
- App remediation typically "shelved" and updates never applied

Update and Innovation Gap

- Accepted short-term risk increase
- Insidious long-term risk
- App portfolio ages
- Out-dated system baselines
- Costly to operate non-homogenous estate
- Hidden remediation cost - "remediate" before an upgrade

Introducing Windows as a Service

Consumer devices

Up to date with feature and security updates as they arrive

Business users

Faster access to new technology with time to test and deploy in a business environment

Specialized systems

Enterprise class support for your mission critical systems keeping you in control

Windows as a Service – Servicing Windows

Quality Updates

A single cumulative update each month

Security fixes, reliability fixes, bug fixes, etc.

Supersedes the previous month's update

No new features

Try them out with Security Update Validation Program (SUVP), other

Feature Updates

Very reliable, with built-in rollback capabilities

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

Try them out with Insider Preview

Branches

Overview

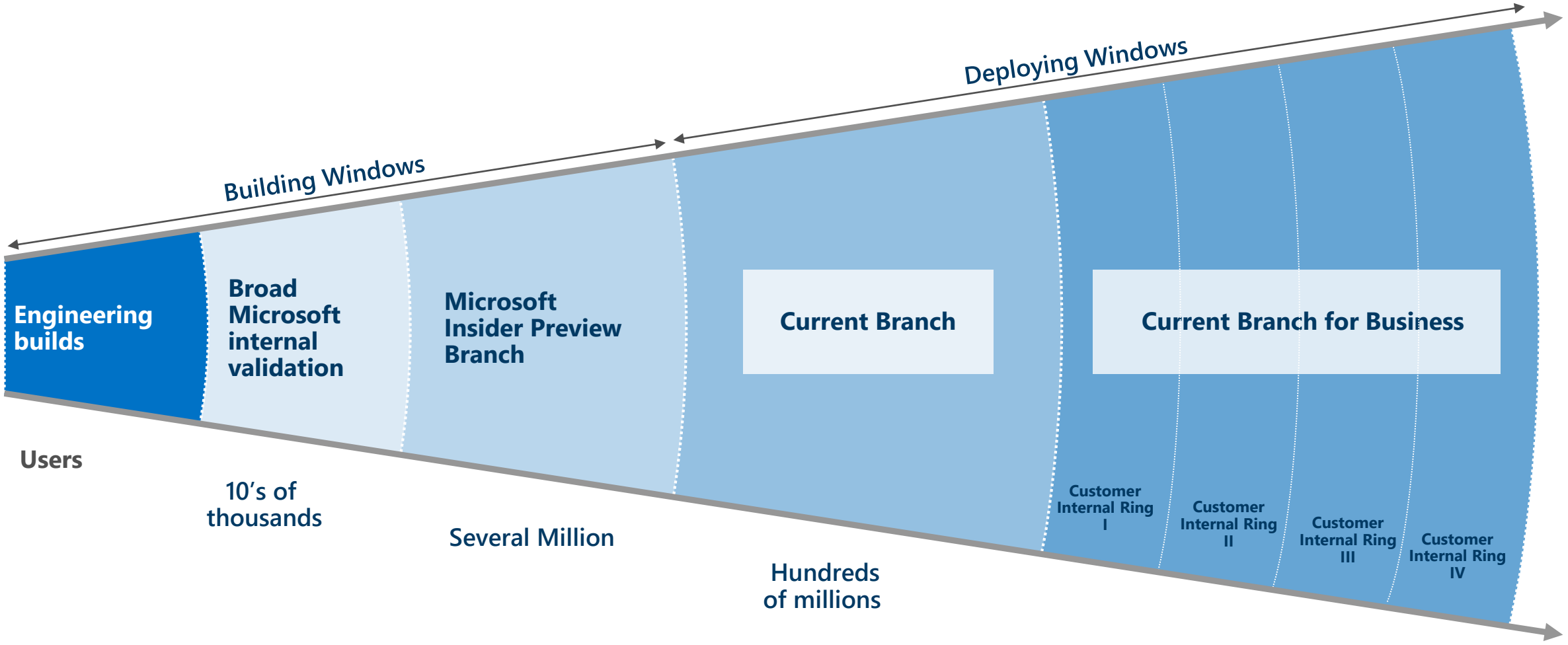
Windows Insider Preview Branch

Current Branch

Current Branch for Business

Long-Term Servicing Branch

Windows as a Service Branches



*Conceptual illustration only

Windows Insider Preview Branch

Overview	Pre-release Windows 10 builds and features

Requirements	▪ Deployment is managed by Microsoft through Windows Update
	▪ Offers Slow or Fast adoption cadence:
	  ▪ Fast
	  ▪ Slow
	  ▪ Release Preview
	▪ Available only through the Windows Insider Program.
	▪ Individuals should use a Microsoft Account to enroll in the program
	▪ Updated Preview ISOs will be released to coincide with the Slow release

Benefits	▪ Early access to new releases ▪ Preview developer tools for applications ▪ Evaluate new features as they are being developed ▪ Incubate the future of Windows in your organization ▪ Help shape the future of Windows, participating in the Windows Insider community
Recommended Usage	▪ Non-Production (lab) environment ▪ Second Device ▪ Technically adept users ▪ Test new features ▪ Performance testing ▪ Developer enhancements ▪ Developer tool enhancements ▪ Forward planning

Current Branch

Overview	▪ Public release of new features ▪ Release cadence is slower than the Preview Branch ▪ Validation by millions of Windows Insider Program users prior to release ▪ Feature set is considered ready by Microsoft for broad adoption
Requirements	▪ Existing Windows 10 systems on the Current Branch ▪ In-place upgrade supported for down-level Windows Operating Systems ▪ Release performs an upgrade of the existing Windows 10 installation
Benefits	▪ Latest innovation for Windows coming as feature updates ▪ Release cadence is expected to be 2 times per year ▪ Monthly updates will be released as cumulative packages
Recommended Usage	▪ New devices & Consumer systems ▪ IT Pro – Primary system ▪ IT Developer – Primary system ▪ Systems used for application testing/validation ▪ Early adopters and change enablers ▪ Target groups should provide feedback to Corporate IT

Updates to the Current Branch

Cadence	▪ Urgent Security fixes will be released immediately, or on 2nd Tuesday of each month ▪ Non-security & non-urgent security fixes available in a Current Branch release ▪ Updates will apply to the last Current Branch release, and will be superseded by the next Current Branch release
Tools	▪ Windows Update ▪ Windows Update for Business ▪ Windows Server Update Services ▪ System Center Configuration Manager integrated with Windows Server Update Services ▪ Mobile Device Management such as Microsoft Intune
Considerations	▪ Reference system images ▪ Existing systems ▪ Applications

Urgent Security fixes

Current Branch for Business

Overview	▪ Deferred Current Branch ▪ Current Branch is validated by millions of users prior to update release ▪ Validation by selected business systems in your organization
Requirements	▪ Deferred Current Branch installation ▪ Deployment is managed by WU, WUB, WSUS, MDM or Configuration Manager ▪ WSUS or Configuration Manager updated to support feature update deployment
Benefits	▪ Ready for broad corporate adoption ▪ Businesses are able to stay up to date but at a slower pace to allow for internal validation ▪ Ability to stage internal deployment
Recommended Usage	▪ Configure systems to defer feature upgrades ▪ Systems configured to defer the installation will delay until the installation is mandatory ▪ Target groups should provide feedback to Corporate IT ▪ Microsoft will release updated media periodically

Long Term Servicing Branch

Overview

- There will be a specific media for Long-Term Servicing Branch
- First Long-Term Servicing Branch aligns with the release of Windows 10 build 1507 (RTM)
- Second Long-Term Servicing Branch follows the release of Windows 10 build 1607
- Approx. 3-6 month notification prior to releasing a Long-Term Servicing Branch

Requirements

- Only for Windows 10 Enterprise Edition
- Requires Enterprise and Software Assurance Agreements

Benefits

- Release cadence is longer than Current Branch for Business
- Innovation delivered only at next Long-Term Servicing Branch release
- In place upgrade from one Long-Term Servicing Branch to another
- Ability to skip one Long-Term Servicing Branch release

Recommendations

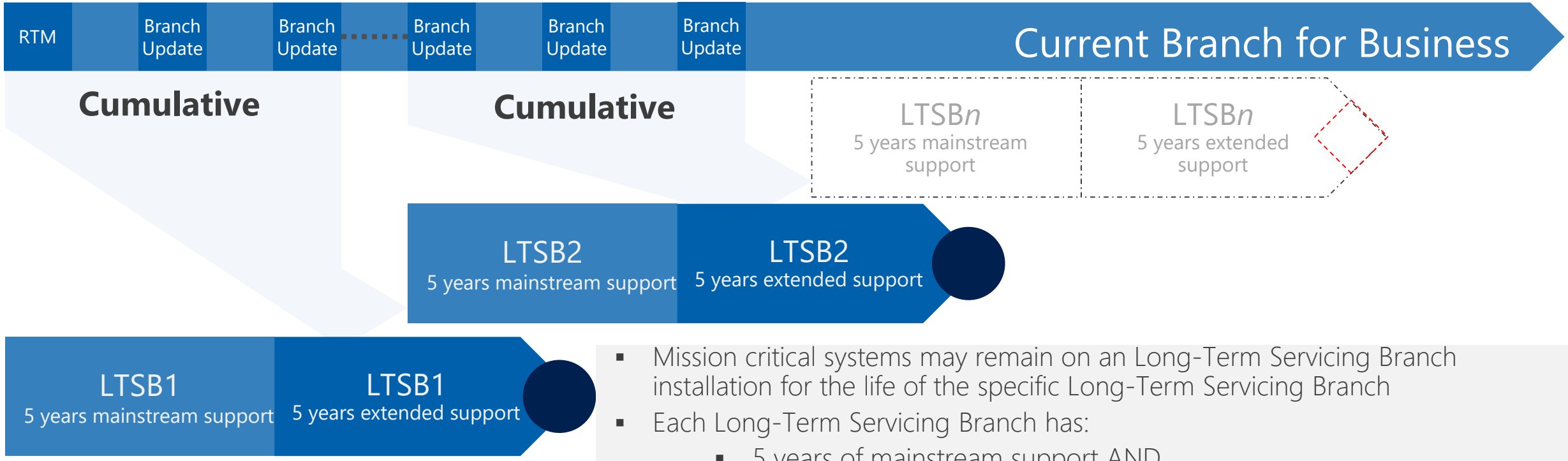
New systems

- Create a reference system image using the Long-Term Servicing Branch media
- Re-install the device

Existing systems

- In-place upgrade from supported operating systems
- Possible to skip 1 Long-Term Servicing Branch upgrade i.e. install alternate Long-Term Servicing Branch upgrades
- Deployed using WSUS or from updated media

Long Term Servicing Branch



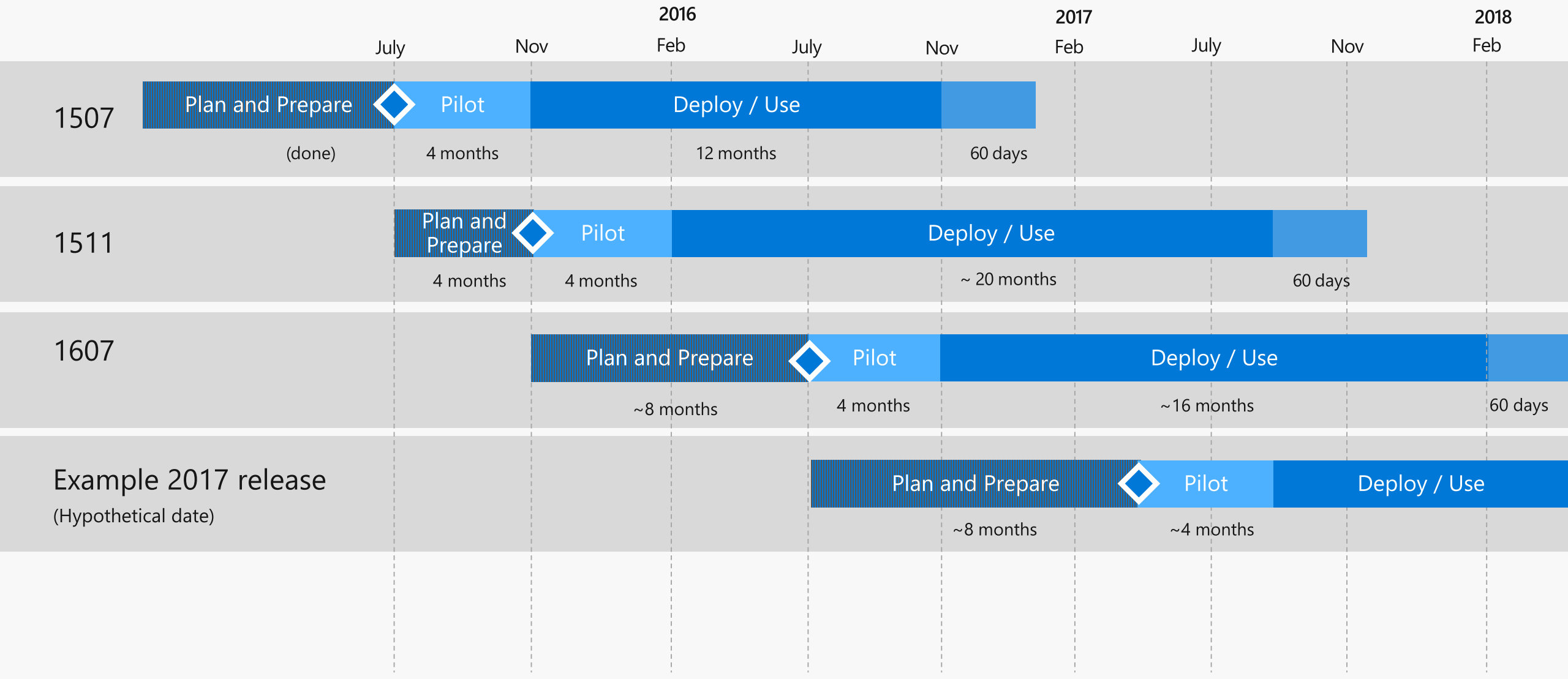
- Mission critical systems may remain on an Long-Term Servicing Branch installation for the life of the specific Long-Term Servicing Branch
- Each Long-Term Servicing Branch has:
  - 5 years of mainstream support AND
  - 5 years of extended support
- After 10 years, the specific Long-Term Servicing Branch is no longer supported by Microsoft
- In-Place upgrade supported from one Long-Term Servicing Branch to the next
- Monthly security updates are available for the life of the specific Long-Term Servicing Branch
- Limited support for future chip sets

Operating with Windows as a Service

- How it works
- Deferring feature updates
- Application compatibility impact
- Moving branches

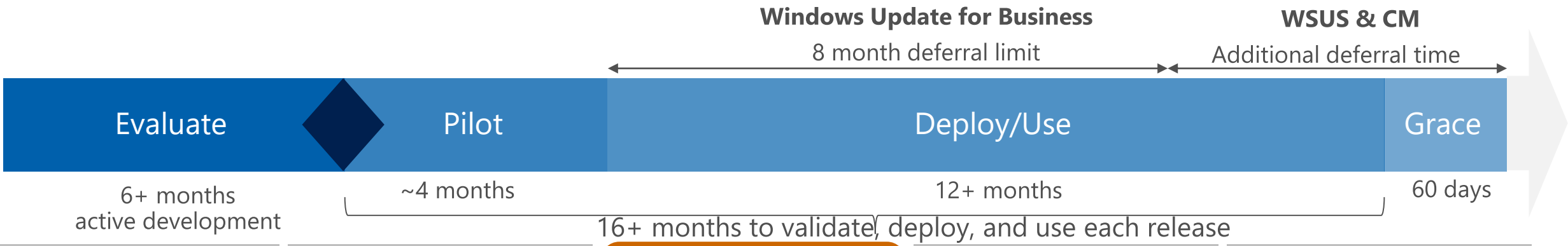
Windows as a service: establishing a rhythm

Two releases supported in market



Deferring Feature Updates

Overview	▪ Defer the installation of a feature update for up to 8 months with Windows Update for Business ▪ Defer the installation of a feature update for supported life of the release with WSUS and System Center Configuration Manager
Applies to	▪ Windows 10 Professional or Enterprise, Build 1511
How?	▪ Manually configured in the Windows 10 Settings application ▪ Centrally configured using Group Policy for domain-joined systems ▪ Centrally configured using OMA-DM for MDM-enrolled systems - OMA-URI for the CSP: ./Vendor/MSFT/Update/DeferUpgrade ▪ Centrally managed for domain-joined systems with WSUS or System Center Configuration Manager



Update Windows 10 Reference Image

Overview	System images require updating to ensure that systems are deployed with the latest updates
System Image Creation	▪ Monthly security updates can be added to an image using offline servicing ▪ Feature updates cannot be installed into a Windows 10 image using offline servicing ▪ For feature updates, a new system image must be created ▪ Obtain the latest volume license media and recreate the reference system image
Considerations	▪ New image can be created after new media is available ▪ Validation of branch update is performed prior to creating new image. Quality-based release ▪ Recommend new image created when Ring 2 release is ready ▪ Device driver updates may be required to leverage new features

Moving Branches

Starting From	Going to		
	Insider Preview	CB/CBB	LTSB
Insider Preview	In-Place Upgrade as new builds are released	In-Place Upgrade to the final CB/CBB release	Not Supported Need to wipe & reload
CB/CBB	In-Place Upgrade after signing up	In-Place Upgrade to next CB/CBB release	Not Supported Need to wipe & reload
LTSB	Not Available for LTSB installs (wait for release)	In-place Upgrade to later CB/CBB release	In-place Upgrade to later LTSB release

Wipe and Load – Windows 10 deployment and solution to migrate data/settings

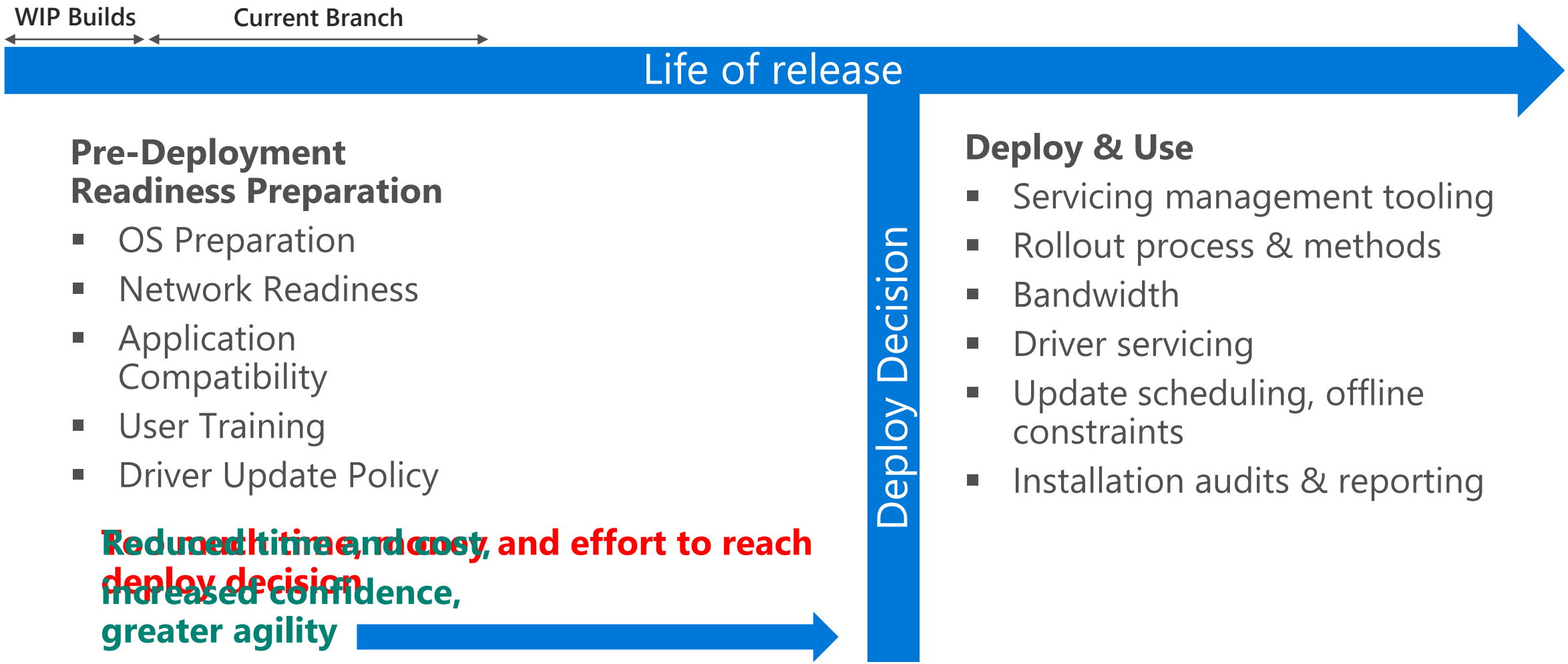
Integrating Windows as a Service into the Enterprise

Adoption

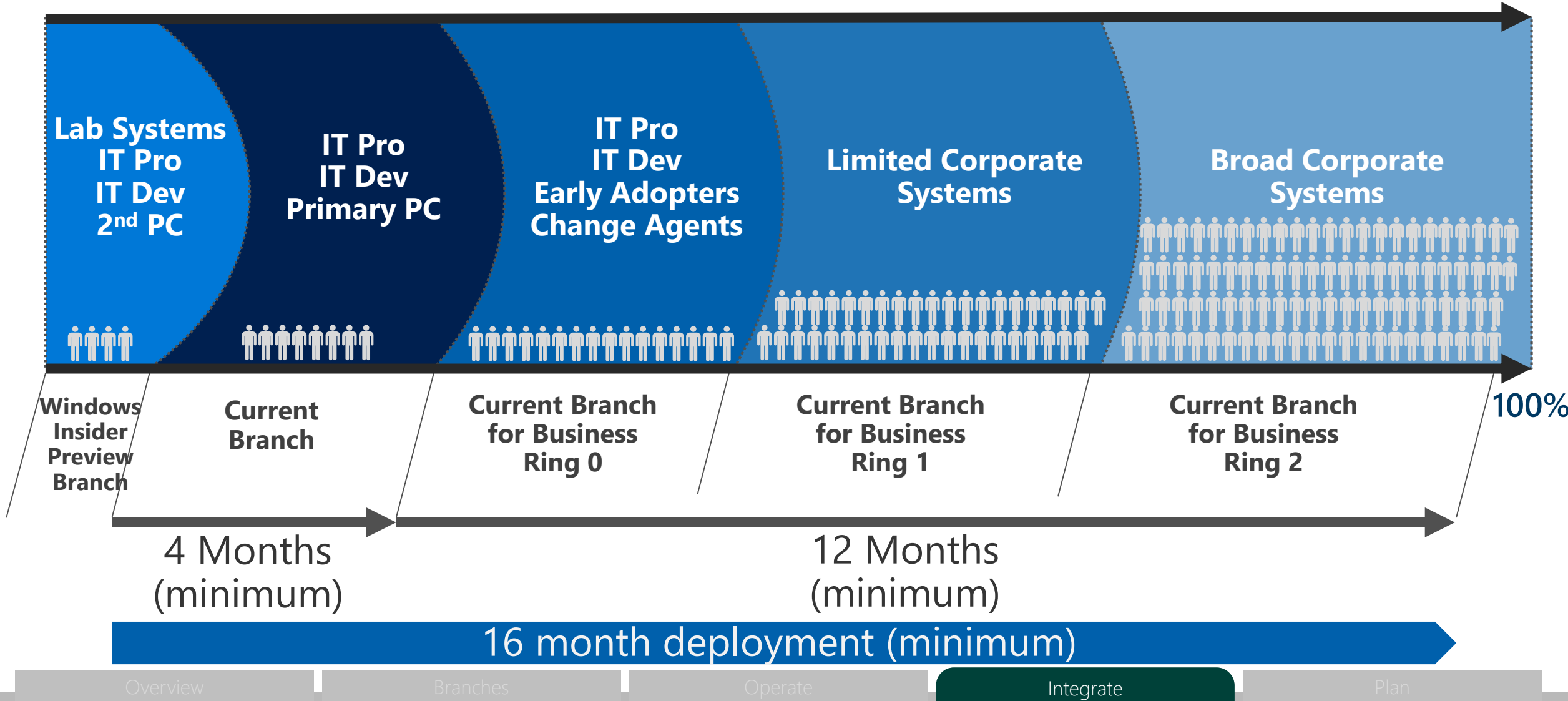
Managing WaaS

Implementing

Lifecycle Management

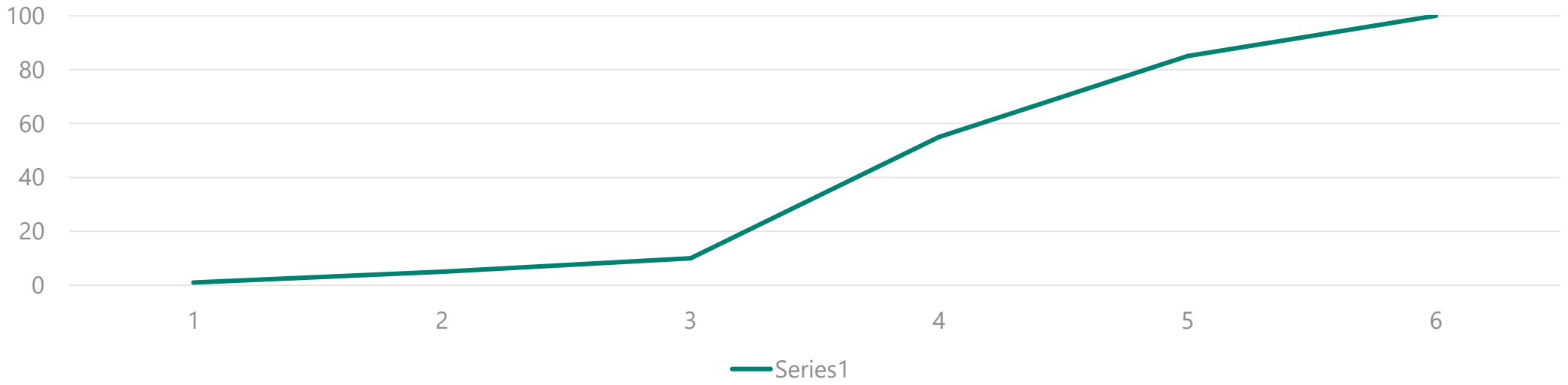


Adoption Planning



Windows as a Service Strategy Example

Branch	Ring	Onboarding	Opt Out	Deferral	% of devices
WIP	N/A	MSA	User	N/A	<1
CB	A	Domain Join MDM Enrollment	Admin	Move to CBB	4
	B				5
CBB	0			E.g. 2 months	45
	1			E.g. 6 months	30
	2			E.g. 10 months	15



Managing Windows as a Service

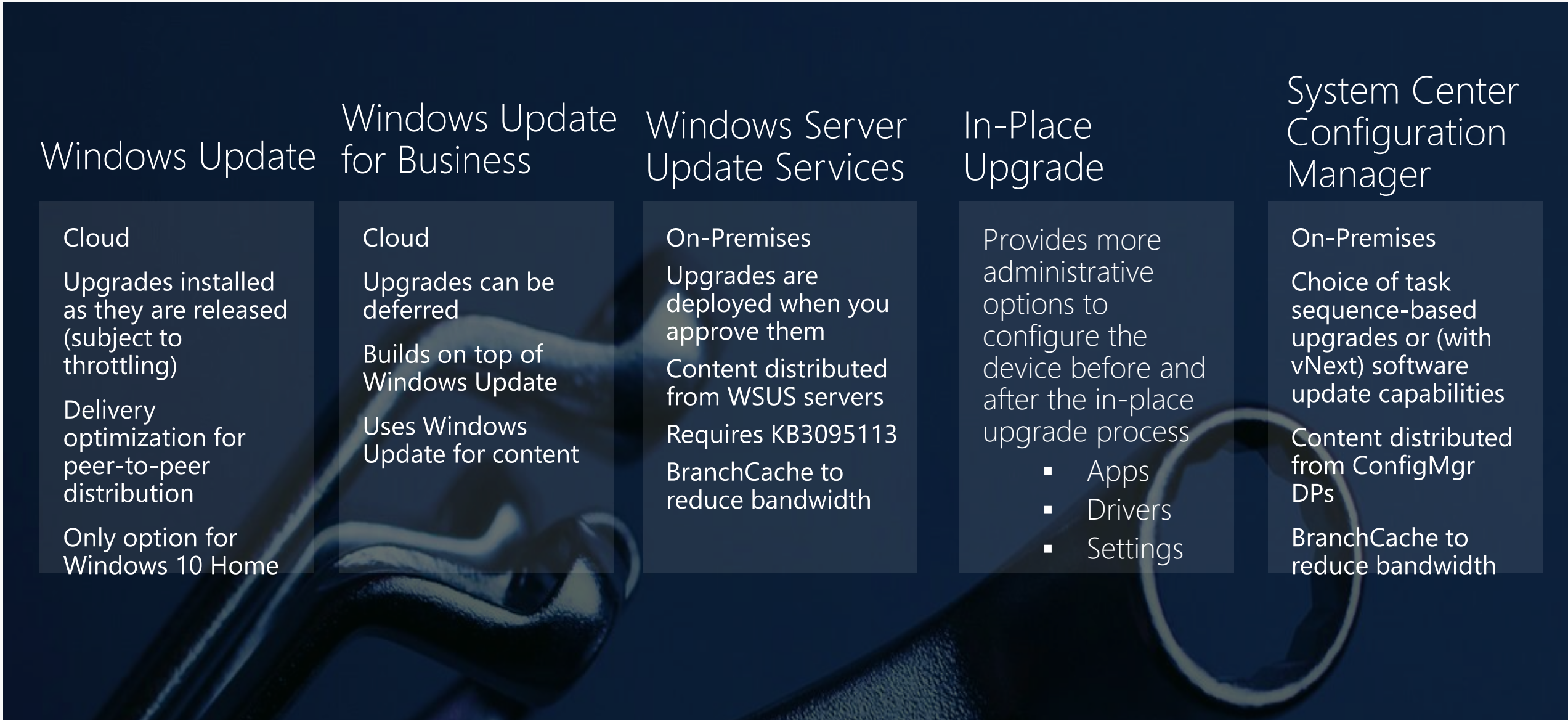
Method	Branch	Content	Content Source	Configuration Method
Cloud (Windows Update for Business)	▪ Current Branch ▪ Current Branch for Business	▪ Quality Updates ▪ Feature Updates*	▪ Windows Update	▪ Group Policy, MDM or User
On-Premises	▪ Current Branch ▪ Current Branch for Business ▪ Long Term Servicing Branch	▪ Quality Updates ▪ Feature Updates	▪ Windows Server Update Services (WSUS)**	▪ Group Policy ▪ WSUS Console

			▪ Task Sequence
			  ▪ File Share
			  ▪ Distribution Point
				▪ Microsoft Deployment Toolkit
				▪ System Center 2012 Configuration Manager SP2 & above***

			▪ Software Update Point	▪ System Center Configuration Manager***

Each option explored in upcoming slides

Identifying a tool to use



Windows Update

- Cloud
- Upgrades installed as they are released (subject to throttling)
- Delivery optimization for peer-to-peer distribution
- Only option for Windows 10 Home

Windows Update for Business

- Cloud
- Upgrades can be deferred
- Builds on top of Windows Update
- Uses Windows Update for content

Windows Server Update Services

- On-Premises
- Upgrades are deployed when you approve them
- Content distributed from WSUS servers
- Requires KB3095113
- BranchCache to reduce bandwidth

In-Place Upgrade

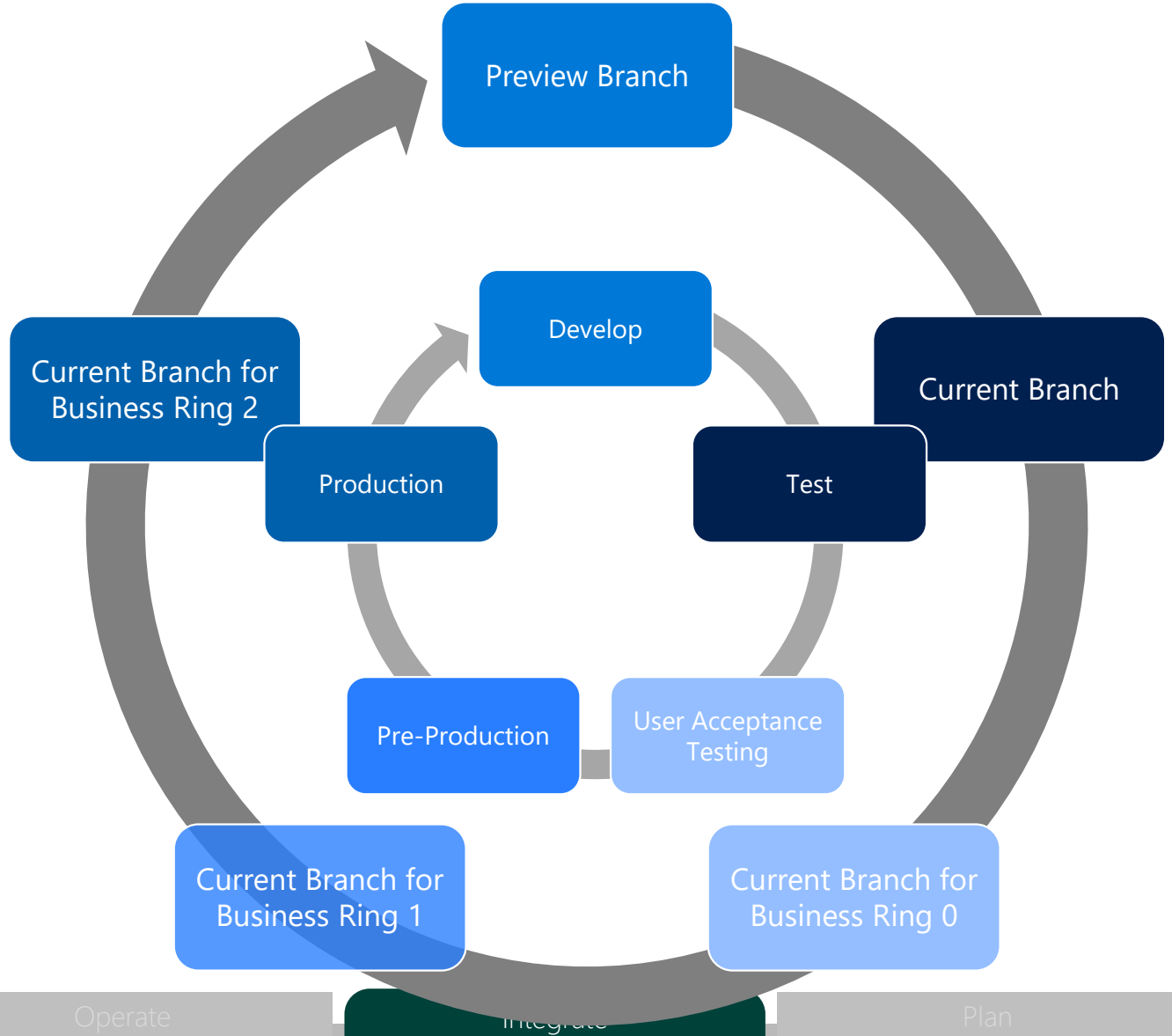
- Provides more administrative options to configure the device before and after the in-place upgrade process
  - Apps
  - Drivers
  - Settings

System Center Configuration Manager

- On-Premises
- Choice of task sequence-based upgrades or (with vNext) software update capabilities
- Content distributed from ConfigMgr DPs
- BranchCache to reduce bandwidth

Integrate into Existing Release Management Processes

- Familiar process
- Quality-based release
- Measurable progress
- Clear signoff requirement
- Inherently open to future innovation



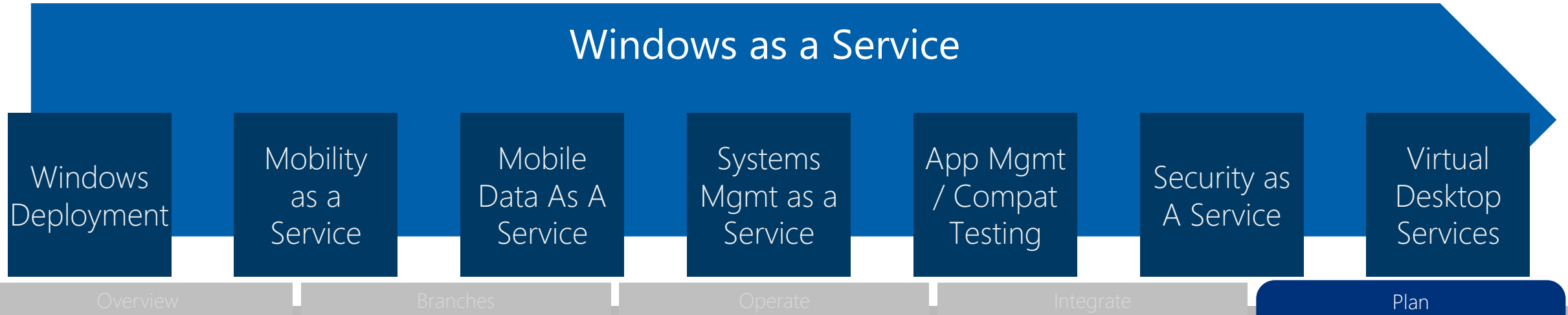
Planning Windows as a Service

Overview

Modern service management for Windows 10

Modern Service Management for Windows 10

- Modern Service Management approaches align and support Windows 10 release and patch patterns
- Traditional “process heavy”, manual IT Service Management operations and management models will hinder successful Windows 10 Deployment
- Plan for and formalize “Service Capabilities” rather than “Process Maturity”.
- Organizations already do many of these but not managed as integrated service.
- Microsoft has identified the following “underpinning services” that are enablers of Windows as a Service. Not all required as customer requirements may vary:



Modern Service Management for Windows 10

Windows as a Service

- Governance and Management of Windows 10 “Service”
- Planning and Communication of Updates
- Update Management
- Manage and Respond to Requests and Approvals
- Inventory Management

Windows Deployment

- Deployment services for in-place upgrades from Windows 7 forward as well as bare metal Operating System Deployment

Mobility as a Service

- Windows and Non-Windows mobility
- Mobility Management Services across heterogeneous environments
- Device Inventory

Mobile Data As A Service

- Cloud based Storage
- Provisioning and Management of One Drive for Business or other Mobile Storage services to be

Systems Mgmt as a Service

- Management of Configuration, Deployment and Monitoring Tools
- Health and compliance monitoring
- Integration to Service Desk and Portal

App Mgmt / Compat Testing

- Efficiently streamlining application rationalization, testing and compatibility mitigation.
- Application Management Services

Security as A Service

- Security controls and requirements
- Creating an available and efficient client experience, maximizing security

Virtual Desktop Services

- Provision and Management of Virtual Desktop environment
- Application Virtualization Services

Next Steps

- **Continue your Learning**: aka.ms/ITInnovationResources

  Access online training, demos & try Windows 10 Enterprise for free

- **Build on the Skills Learnt Today:** Aka.ms/winlabs

  Access Virtual Labs on the key topics

- **Start your own POC:** Aka.ms/winpoc

  Access Windows 10 Enterprise Self-Service POC

- **Connect with Microsoft Services/Premier on Services**

  Customers can utilize DPS or Premier hours for these many services:

  - ✓ Windows 10 Enterprise Pilot
  - ✓ Windows 10 Mobility Pilot
  - ✓ Security Assessment

Thank you!