Windows 10 for Enterprise: Deployment
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

- **Windows Insider Preview Branch**
  - Specific feature and performance feedback
  - Application compatibility validation
  - Test machines, small pilots

- **Current Branch**
  - Deploy to appropriate audiences
  - Test and prepare for broad deployment
  - Early adopters, initial pilots, IT devices

- **Current Branch for Business**
  - Information workers
  - General population
  - Benefits from new features
  - Begins broad deployment

- **Long Term Servicing Branch**
  - Specialized systems
  - Deploy for mission critical systems
  - No need for frequent new features (or any sort of change)
  - Too expensive for general population

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**STAGE**

**NUMBER OF DEVICES**

**Release**
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

<table>
<thead>
<tr>
<th>Approach</th>
<th>Win32 / UWP Applications</th>
<th>Web Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discover</strong></td>
<td>What applications does my company rely on?</td>
<td>What web applications does my company rely on?</td>
</tr>
<tr>
<td><strong>Rationalize</strong></td>
<td>What should I test</td>
<td>What should I test</td>
</tr>
<tr>
<td><strong>Prioritize</strong></td>
<td>When and how should I test</td>
<td>When and how should I test</td>
</tr>
<tr>
<td><strong>Test</strong></td>
<td>Validate application</td>
<td>Validate web application</td>
</tr>
<tr>
<td><strong>Remediate</strong></td>
<td>Determine remediation approach</td>
<td>Determine site/browser configuration required for remediation</td>
</tr>
<tr>
<td><strong>Deploy</strong></td>
<td>Deploy application in production</td>
<td>Deploy site or browser configuration in production</td>
</tr>
</tbody>
</table>
Overview

Win32 / UWP Applications
- System Center Configuration Manager
- WMI Query
- Microsoft Assessment & Planning Toolkit
- 3rd Party Tools

Web Applications
- Enterprise Site Discovery

Discover
- Windows 10 Setup Compatibility Scan

Rationalize
- Upgrade Analytics
- User and/or Administrator
- Service Provider
- 3rd Party Tools

Prioritize
- F12 Developer Tools
- IE 11 Enterprise Mode

Test
- Application Compatibility Toolkit

Remediate
- Dedicated Resource
- 3rd Party Tools
- ISV

Deploy
- See Windows 10 Deployment Workshop

3rd Party Tools
- Group Policy
- Enterprise Site List
**Approach**

**Overview**

**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.

## Approach

### Overview
- Prepare

## 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
Approach

Overview

- Prepare
  - Reg key configuration to send data to Microsoft for analysis
  - Proxy/firewall configuration may be required to allow data to flow to Microsoft
  - Management/GPO may be used to configure CEIP and set commercial ID on participating systems
  - Install client compatibility analysis tools/KBs and restart

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
- 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

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Required KB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 7 RTM</td>
<td>KB2977759</td>
</tr>
<tr>
<td>Windows 7 SP1</td>
<td>KB2952664</td>
</tr>
<tr>
<td>Windows 8 RTM</td>
<td>KB2976978</td>
</tr>
<tr>
<td>Windows 8.1</td>
<td>KB2976978</td>
</tr>
</tbody>
</table>
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
Approach

Overview

Prepare

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.

- **Windows 10 Cookbook**
  - Leverage the Application Compatibility Cookbook for guidance in verifying compatibility of existing and planned apps for Windows 10.
- **Download** a preview build of the latest Windows SDK and Emulator to explore what's new in building apps for Windows.

### Find Supported Apps

- **Windows Upgrade Analytics**
  - Identify critical issues impeding upgrades; data insights to plan and manage the upgrade process end to end.
- **Ready For Windows Directory**
  - 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

Browser

<table>
<thead>
<tr>
<th>Applications</th>
<th>Browser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 10 ISV application support</td>
<td>Internet Explorer 8</td>
</tr>
<tr>
<td>LOB application support</td>
<td>Internet Explorer 9</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 10</td>
</tr>
<tr>
<td></td>
<td>Windows 7</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 10</td>
</tr>
<tr>
<td></td>
<td>Windows 8</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 10</td>
</tr>
<tr>
<td></td>
<td>Windows 8.1</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 11</td>
</tr>
<tr>
<td></td>
<td>Windows 10</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer</td>
</tr>
<tr>
<td></td>
<td>Microsoft Edge</td>
</tr>
</tbody>
</table>

12 January 2016

Internet Explorer 11

12 January 2016

Internet Explorer 11
What’s New
Microsoft Edge

- 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 a 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.

User Browses the Web (IE8, IE9, IE10, IE11) → Site Scoping → Local Data Collection (WMI) → Data Driven Picture of Web Environment
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
**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.

<table>
<thead>
<tr>
<th>Option</th>
<th>User Experience</th>
<th>Administrative Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>All websites open in Microsoft Edge (Default)</td>
<td>Users needs to manually open Internet Explorer 11 if a site fails to operate correctly.</td>
<td>Nil – default configuration. Critical intranet sites to be tested on Microsoft Edge to confirm operability.</td>
</tr>
<tr>
<td>Websites open in Microsoft Edge unless Internet Explorer 11 is defined by an administrator (Recommended)</td>
<td>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.</td>
<td>Moderate - List creation and management overhead. Users can provide feedback using Enterprise Site Discovery tool to reduce administrative effort.</td>
</tr>
<tr>
<td>All websites open in Internet Explorer 11. (Not Recommended)</td>
<td>Single browser for all sites. Sites may not display correctly.</td>
<td>Low – Setting implemented via Group Policy.</td>
</tr>
</tbody>
</table>
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
<table>
<thead>
<tr>
<th>Overview</th>
<th>Choices</th>
<th>Tools</th>
<th>Recommendations</th>
</tr>
</thead>
</table>


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 Effort

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

Overview

In-place upgrade

- Architecture (x86 → x64)
- Base OS language
- Domain
- Local Administrators
- Configuration drift
- Moving from XP or Vista
- Custom base image

BIOS → UEFI
- Disk partitioning
- WinPE Offline Operation
- 3rd party disk encryption*

New Device

Bare Metal (Custom Image)

Existing Device

Device Considerations

Existing Device

BIOS → UEFI
- Disk partitioning
- WinPE Offline Operation
- 3rd party disk encryption*

Operating System Considerations

Application Considerations

- Bulk app change

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

In-Place Upgrade

Upgrade key apps as needed post OS update
## 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.

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

## Overview

### In-place upgrade

<table>
<thead>
<tr>
<th><strong>Advantages</strong></th>
<th><strong>Disadvantages</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>64-bit Operating System (Recommended)</td>
<td></td>
</tr>
<tr>
<td>- Single image architecture support</td>
<td>- No 16-Bit application support</td>
</tr>
<tr>
<td>- Fewer deployment objects to support</td>
<td>- No x86 device support (e.g. legacy and tablet devices)</td>
</tr>
<tr>
<td>- Simple driver support</td>
<td>- Authentication applications (e.g. GINA, biometric) support</td>
</tr>
<tr>
<td>- Reduced engineering support due to single architecture policy</td>
<td></td>
</tr>
</tbody>
</table>

| 32-bit Operating System | |
| - Legacy device drivers likely to function | - When multiple images are used, the Image Creation Service must support multiple image engineering, deployment and test scenarios |
| - Allows for increased device compatibility | - Devices limited to 4GB RAM |
| - Better support for machines with older hardware specifications | |
| - Same Compatibility options as Previous OS's | |
## Strategy

### Image Strategy

<table>
<thead>
<tr>
<th>Image Strategy</th>
<th>Thin Image</th>
<th>Hybrid Image</th>
<th>Thick Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Updates</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Windows Features</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Common Frameworks</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Common Productivity Apps</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>LOB used by Every Employee</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Frequently Updated Frameworks</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>LOB Applications</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### 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
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.

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

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.

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

- 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

Start: Windows 7, Windows 8, Windows 8.1

Capture data and settings
Remove existing OS
Install new OS image
Install apps
Restore data and settings

Finish: Windows 10

Deployment Tools (MDT, System Center Configuration Manager)
## Deployment Methods

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

<table>
<thead>
<tr>
<th></th>
<th>Windows Vista</th>
<th>Windows 7</th>
<th>Windows 8</th>
<th>Windows 8.1</th>
<th>Windows 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Vista</td>
<td>4.0</td>
<td>4.0, 5.0</td>
<td>5.0</td>
<td>6.3</td>
<td>Supported</td>
</tr>
<tr>
<td>Windows 7</td>
<td>4.0, 5.0, 6.3</td>
<td>5.0, 6.3</td>
<td>6.3</td>
<td>6.3</td>
<td>Supported</td>
</tr>
<tr>
<td>Windows 8</td>
<td></td>
<td>5.0, 6.3</td>
<td>6.3</td>
<td>6.3</td>
<td>Supported</td>
</tr>
<tr>
<td>Windows 8.1</td>
<td></td>
<td></td>
<td>6.3</td>
<td>6.3</td>
<td>Supported</td>
</tr>
<tr>
<td>Windows 10</td>
<td></td>
<td></td>
<td></td>
<td>Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Platform Configuration

- **BIOS**
  - Flexible Deployment Media Support
  - All legacy deployment methods still apply
  - Maintain a single boot image

- **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

- **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.

**Device Examples**

- Devices purchased over 4 years ago
- Devices purchased within 4 years
## Driver Management

<table>
<thead>
<tr>
<th>Option</th>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Apply Drivers</td>
<td>▪ Easy to setup and maintain.</td>
<td>▪ Less control over drivers chosen – first driver wins.</td>
</tr>
<tr>
<td></td>
<td>▪ Driver to client device matching ‘just works’</td>
<td>▪ If a problem occurs, troubleshooting is more difficult.</td>
</tr>
<tr>
<td>Apply Driver Packages (Recommended)</td>
<td>▪ Administrator can specify the exact driver for a particular make and model of client device.</td>
<td>▪ Additional up-front configuration and maintenance required.</td>
</tr>
<tr>
<td></td>
<td>▪ More control over each client device</td>
<td></td>
</tr>
</tbody>
</table>
Recommendations
Consider wipe & load when...

<table>
<thead>
<tr>
<th>Configuration Drift / Change</th>
<th>Fundamental Change</th>
<th>Custom Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Domain membership</td>
<td>- Moving from Windows XP or Windows Vista</td>
<td></td>
</tr>
<tr>
<td>- Local Administrators</td>
<td>- Disk partitioning</td>
<td></td>
</tr>
<tr>
<td>- Bulk application swap</td>
<td>- BIOS -&gt; UEFI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- x86 -&gt; x64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Base OS language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- WinPE offline operation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Custom base image</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 3rd party disk encryption</td>
<td></td>
</tr>
</tbody>
</table>
In-Place Upgrade

Overview
Upgrade vs Refresh
Recovery & Troubleshooting
Prepare

Upgrade Process
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

Start
Windows 7
Windows 8
Windows 8.1

Capture data and settings
Remove existing OS
Install new OS image
Restore data and settings

Windows Setup

Finish
Windows 10
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

<table>
<thead>
<tr>
<th>Perform a Pre-Validation Check</th>
<th>Disk Encryption Compatibility</th>
<th>Plan Pilot Approach</th>
<th>Plan for Content Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Windows 10 media to assess system readiness</td>
<td>Check disk encryption technology support (if required)</td>
<td>Define success criteria ▪ Critical LoB and Web apps tested ▪ User Experience ▪ Group Policy / management configuration updates required</td>
<td>Windows 10 Upgrade package size approximately 3.8Gb</td>
</tr>
<tr>
<td></td>
<td>Understand 3rd party ISV plans to support In-Place Upgrade approach</td>
<td></td>
<td>Plan for content delivery to large, medium and branch sites</td>
</tr>
<tr>
<td></td>
<td>Work with Microsoft to address blockers</td>
<td></td>
<td>Utilize content caching technologies where required</td>
</tr>
</tbody>
</table>
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 triggered 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

Start Windows 10
- Remove existing items
- Enable Enterprise SKU
- Add corporate apps
- Add corporate config

Finish Windows 10

Provisioning Package
Provisioning Package (Deployment)
Provisioning Package (Runtime)
Windows ICD makes it easy to build and flash a Windows image, create provisioning packages, or set up devices to use within your organization. To go or open a Recent project.

Create

- Simple provisioning
  - Configure common settings to connect devices to your work or school domain
- Provision school devices
  - Configure common settings for educational devices
- Advanced provisioning
  - View and configure all possible settings on provisioned devices
- Windows image customization
  - Create and customize settings for a Windows image

Recent projects

- Project_2
- Advanced provisioning
  - Windows 10 IoT Core
- Settings
  - Demonstration
- Advanced provisioning
  - All Windows desktop editions
- Project_1
- Open
- IOT
- Advanced provisioning
  - All Windows desktop editions
- Project_5
- Advanced provisioning
  - All Windows desktop editions
Windows as a Service
Introducing WaaS

Why Windows as a Service (WaaS)?

Introducing WaaS
Becoming Agile with Microsoft

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
Overview

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
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 2\textsuperscript{nd} 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

### Recommendation(s)
**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
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

- Plan and Prepare
- Pilot
- Deploy / Use

1507
- Plan and Prepare: 4 months
- Pilot: 12 months
- Deploy / Use: 60 days

1511
- Plan and Prepare: 4 months
- Pilot: 4 months
- Deploy / Use: ~20 months

1607
- Plan and Prepare: ~8 months
- Pilot: 4 months
- Deploy / Use: ~16 months

Example 2017 release
(Hypothetical date)
- Plan and Prepare: ~8 months
- Pilot: ~4 months
- Deploy / Use: 60 days
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

---

### Windows Update for Business

- **8 month deferral limit**

### WSUS & CM

- **Additional deferral time**

---

**Evaluate**
- 6+ months active development

**Pilot**
- ~4 months

**Deploy/Use**
- 12+ months

**Grace**
- 60 days

16+ months to validate, deploy, and use each release
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

Branch Update - Obtain NEW FULL CBB Media - Inject monthly updates into WIM - “Image Factory” - Update Image Store - Deploy New Image
## Moving Branches

<table>
<thead>
<tr>
<th>Starting From</th>
<th>Going to</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insider Preview</td>
<td>CB/CBB</td>
</tr>
<tr>
<td>Insider Preview</td>
<td>In-Place Upgrade as new builds are released</td>
<td>In-Place Upgrade to the final CB/CBB release</td>
</tr>
<tr>
<td>CB/CBB</td>
<td>In-Place Upgrade after signing up</td>
<td>In-Place Upgrade to next CB/CBB release</td>
</tr>
<tr>
<td>LTSB</td>
<td>Not Available for LTSB installs (wait for release)</td>
<td>In-place Upgrade to later CB/CBB release</td>
</tr>
</tbody>
</table>

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

Pre-Deployment Readiness Preparation
- OS Preparation
- Network Readiness
- Application Compatibility
- User Training
- Driver Update Policy

Deploy & Use
- Servicing management tooling
- Rollout process & methods
- Bandwidth
- Driver servicing
- Update scheduling, offline constraints
- Installation audits & reporting

Reduced time, money, and effort to reach deploy decision.
Increased confidence, greater agility.
## Windows as a Service Strategy Example

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

The chart on the right shows the percentage of devices in each branch over time. The x-axis represents time in months, and the y-axis represents the percentage of devices.
## Managing Windows as a Service

<table>
<thead>
<tr>
<th>Method</th>
<th>Branch</th>
<th>Content</th>
<th>Content Source</th>
<th>Configuration Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud (Windows Update for Business)</td>
<td>▪ Current Branch ▪ Current Branch for Business</td>
<td>▪ Quality Updates ▪ Feature Updates*</td>
<td>▪ Windows Update</td>
<td>▪ Group Policy, MDM or User</td>
</tr>
<tr>
<td>On-Premises</td>
<td>▪ Current Branch ▪ Current Branch for Business ▪ Long Term Servicing Branch</td>
<td>▪ Quality Updates ▪ Feature Updates</td>
<td>▪ Windows Server Update Services (WSUS)**</td>
<td>▪ Group Policy ▪ WSUS Console</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Task Sequence ▪ File Share ▪ Distribution Point</td>
<td>▪ Microsoft Deployment Toolkit ▪ System Center 2012 Configuration Manager SP2 &amp; above***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Software Update Point</td>
<td>▪ System Center Configuration Manager***</td>
</tr>
</tbody>
</table>

Each option explored in upcoming slides
Identifying a tool to use

<table>
<thead>
<tr>
<th>Windows Update</th>
<th>Windows Update for Business</th>
<th>Windows Server Update Services</th>
<th>In-Place Upgrade</th>
<th>System Center Configuration Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud</td>
<td>Cloud</td>
<td>On-Premises</td>
<td>Provides more administrative options to configure the device before and after the in-place upgrade process</td>
<td>On-Premises</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upgrades can be deferred</td>
<td></td>
<td>Choice of task sequence-based upgrades or (with vNext) software update capabilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Builds on top of Windows Update</td>
<td></td>
<td>Content distributed from ConfigMgr DPs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uses Windows Update for content</td>
<td></td>
<td>BranchCache to reduce bandwidth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upgrades are deployed when you approve them</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Content distributed from WSUS servers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requires KB3095113</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td>BranchCache to reduce bandwidth</td>
<td></td>
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<tr>
<td>Cloud</td>
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<tr>
<td></td>
<td></td>
<td>BranchCache to reduce bandwidth</td>
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<td></td>
</tr>
</tbody>
</table>

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

Windows as a Service

- Windows Deployment
- Mobility as a Service
- Mobile Data As A Service
- Systems Mgmt as a Service
- App Mgmt / Compat Testing
- Security as A Service
- Virtual Desktop Services
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
➤ **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!