

How to Develop an Effective Windows 10 Migration and Upgrade Strategy

AN IVANTI WHITE PAPER



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Windows 10

Migration and Upgrade Strategies

Introduction

This Windows 10 Planning and Strategies white paper is the second in a series of publications on the subject of managing, maintaining, and optimizing Windows 10. These documents have been adapted from a series of blogs that were written on the subject. In the eBook, "Windows 10 Primer: Five Key Takeaways about Branches and Cumulative Updates", we listed key takeaways for each branch type, the following table includes a summary of those points:

Fast-Paced Branches		Business-Paced Branches		What's In an Update?	
Insider Preview (Branch)	 Comes in two update frequencies: fast (one to three times a month) and slow (every few months) Use to test against system baselines for early warning of issues Will be disruptive—use with highly technical users connected to IT Deploy widely on product systems 	Current Branch for Business (CBB)	 More stable Current Branch—delivered four months after the Current Branch Upgrades can be deferred approximately eight months The upgrade process will be significant just like Current Branch 	Cumulative Updates (Patches)	 Patches and updates come once a month, which you can choose to deploy or not; not deploying creates greater security risks Cumulative patches cannot be broken apart in order to deploy only the patches you want Microsoft is moving all of its OS updates to this same delivery model; it's no longer just a Windows 10 issue!
Current Branch (Consumer)	 Default update cadence for Windows 10 Upgrades are large (3-4 GB); more like an operating system upgrade Security updates are supported for the current and previous branch once the current is declared a Current Branch for Business 	Long-Term Servicing Branch (LTSB)	 Similar to previous Windows versions with new features every two to three years Doesn't have some new features such as the Edge browser Separate installation and can only be purchased in the Enterprise edition via Volume Licensing; costs more to get less Designed to minimize changes, which is good for change-sensitive computers or organizations 		

Once you understand how the Windows 10 branches work and their implications, you'll quickly see why enterprises need to have a Windows 10 branch-selection strategy. With the Windows 10 upgrade models, every enterprise will need to plan on deploying and supporting multiple branches.



Once is Not Enough

Standardization has been a best practice in the enterprise to increase stability and reduce costs. The challenge with Windows 10 is the perpetual introduction of new features, not to mention all-or-nothing patching. In order to address potential risks, a new approach should be considered with branch selection:

- Standardize: Place most machines on one branch
- Early Adopters: Use a faster-updating branch for a smaller set of systems where you can gather early feedback for potential application compatibility issues
- Stability: Use a slower-updating branch for systems that need higher stability

Windows 10 Branch Upgrade Strategy

A Windows 10 branch upgrade strategy is a necessity for enterprises. With the short patch-support lifecycle for branches, not upgrading will result in significant security risk. This will require a new level of upgrade planning and execution.

Upgrade or Be Vulnerable

With Windows 10, the imperative to upgrade branches is critical to staying secure. In May 2016 at the WinHec 2016 conference, Microsoft clarified that branch upgrades would come out twice a year instead of the two to three times a year that had been communicated earlier (see the slides from the presentation for details). There was also some clarity on the lifecycle of a branch.



As you can see, the full lifecycle (excluding Insider Preview) is at least 18 months. Using this as a foundation, enterprises should plan out their Windows 10 branch upgrade strategy.

Upgrade Model

With a constant stream of updates, enterprises will in turn need to develop constant rollout processes, which will often overlap. Here's a three-step approach you can apply to different rollout plans:

- Pilot on Current Branch: Since branches are progressive in nature, the pilot phase of the rollout should be scheduled to commence with the release of Current Branch. Current Branch will stabilize over time so that pilot systems can detect issues that may affect production systems.
- Production on Current Branch for Business: When the branch is declared Current Branch for Business, it should be very stable and the pilot rollouts should have already identified branch-compatibility issues that can be addressed before this phase begins.
- Grace Period for Problem Upgrades: Enterprises should be done with upgrades before hitting the grace period and use this time to address problem upgrades only.



Current Branch for Business Standardization Example

Using the branch strategy, let's apply this to a company that wants to standardize on Current Branch for Business.

- Standardize (80-90%) Current Branch for Business
 - o This would encompass most end-user computers and some fixed-function computers
- Early adopters (5-10%) Current Branch
 - Ideally you want a sample across various departments to account for application differences
 - o Target power users who are able to identify and work with IT to understand issues that may arise
- Stability (5-10%) Long-Term Servicing Branch (LTSB)
 - This could include control systems for specialized devices such as medical instruments, manufacturing machines, point-of-sale, etc.

Obviously there can be some variations of the percentages depending on the enterprise and types of systems therein.

LTSB Standardization Example

Microsoft states that Long-Term Servicing Branch is designed for low-change devices. With its removal of certain modern features, you can see how Microsoft encourages this. That said, many businesses may not want to deal with the frequent feature updates of Current Branch and Current Branch for Business and are willing to pay for LTSB. It seems strange that you have to pay more for less, but that's the case with the LTSB.

In this scenario, complete standardization on LTSB is a reasonable approach, as it's very similar to previous Windows deployment strategies. Having a subset of computers on faster-moving branches is less important as enterprises can simply evaluate the next update to LTSB (expected every two to three years) and deploy as they see fit in their 10-year cycle.

Key Takeaways

Here are the key points to remember and share:

- Most enterprises should plan on having systems on multiple branches
- Standardize on one branch, have some systems on a faster updating branch for compatibility testing, and change sensitive systems to a slower updating branch
- Long-Term Servicing Branch is the most likely single branch exception to this model

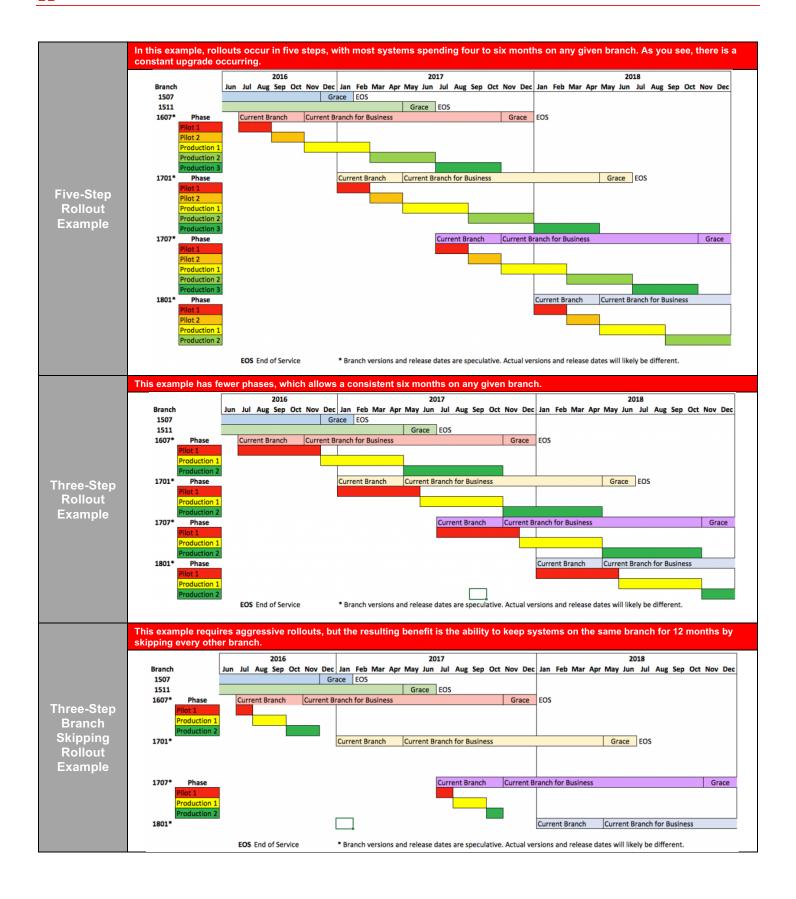
Now that we've covered the Windows 10 branch strategy, the next section explores the Windows 10 update or upgrade strategy.

A Few Examples of Upgrade Rollouts

With this as a basic model, let's explore a few examples of upgrade rollouts through the end of 2018: 1) a Five-Step Rollout example; 2) a Three-Step Rollout example; and 3) a Three-Step Branch Skipping Rollout example.

All examples are speculative on release timing and versioning. That said, we've seen two branch releases per year with 1511 and 1607. With the Anniversary Update, there appears to be a pattern to release in July or early August for back-to-school and consumer sales. It appears that a second release will continue to be released later in the year, which would align with business computer releases that are common at the beginning of the year.







Too Fast? Long-Term Servicing Branch

If you find an 18-month lifecycle to be overwhelming for some or all of your systems, then you need Long-Term Servicing Branch (LTSB). Cost and some limitations will apply, but upgrades are in years versus months. The limitations are not trivial (Enterprise Edition only, high cost, reduced features) so be aware that LTSB may not be an option.

Key Takeaways

Here are the key points to share with colleagues and the boss:

- From the availability of Current Branch, plan on a minimum life of approximately 18 months
- Once a branch reaches the end of the support life, no patches will be provided
- Plan on upgrading systems perpetually every four to 12 months when using a phased approach
- If the upgrade lifecycle is too fast, consider LTSB

Now that we've covered branch explanations and strategies, we'll explore a Windows 10 branch upgrade solution architecture in the next section.

Branch Upgrade Solution – Preparation

As you have seen, there are many new concepts and challenges with Windows 10 branch upgrades that didn't exist in previous versions of Windows. With all of that as background, this section and the next one titled "Managing Windows 10 Branch Upgrades with Ivanti" discuss a Windows 10 branch upgrade solution architecture.

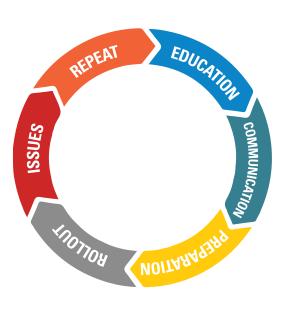
Solution Architecture

In order to build an effective solution, the following elements should be in place:

- 1 Upgrade Education
- 2 End User Communication
- 3. Solution Preparation
- 4. Upgrade Rollout Model
- 5 Issue Management

1. Upgrade Education

Before doing an upgrade, consider the changes to the user experience. While branch upgrades aren't as drastic as a new version of Windows, they do introduce new features and usability gradually. Depending on your organization, you may simply communicate that a new version of Windows 10 will roll out and to expect changes. For those employees who are sensitive to change, you may need to consider some deliberate training in preparation. Use experience from previous OS migrations to determine what's best.





"Begin preparatory work and planning for Windows 10 by 1Q17, regardless of when you will perform the migration."

—"Deciding When to Migrate to Windows 10," Stephen Kleynhans, Gartner, October 16, 2016

The Anniversary Update also makes some subtle (and some not so subtle) changes to how the OS is deployed and managed. Microsoft has a limited number of granular controls over the user experience designed to only work with Windows 10 Enterprise and Education versions. This includes controls around the presentation of Windows Store, and the display of tips and suggestions within the OS.

2. End User Communication

Don't underestimate the importance of communication as you develop your solution. As noted in the Windows 10 Current Branch article, upgrades will be disruptive and take around 30 minutes. With these challenges in mind, communications should be multi-phase:

Pre-Upgrade Application Owners: Application owners should be notified of the upgrade plan and schedule so they can test their application to ensure business continuity. Constant communication of the upgrade process should be delivered to the application owners.



- Pre-Upgrade End Users: Users should be prepared to understand that the upgrade experience is unlike anything they have experienced in the past. It will take time and prevent them from doing work. Show them screen shots of what they can expect and remember users will ignore your emails. Per the upgrade education section, make sure to educate them on changes before the upgrade.
- **Upgrade Launch**: As mentioned, users will ignore any emails you send them. Before the upgrade is launched, users should have an on-screen notification that summarizes what will happen and they should be directed to a web portal with detailed explanations.
- **Post Upgrade**: Branch upgrades introduce new features, and despite all the testing you may do, there is the still the potential for issues. After migration, make sure there is a method to gather feedback and measure upgrade issues.

3. Solution Preparation

Readiness is demonstrated through your plan and that plan requires visibility into your network as well as knowing how to handle the additional bandwidth and behavior of your users. In your plan, you should consider the following:

- **Upgrade Readiness:** An operating system migration requires many considerations (CPU, RAM, etc.). In the case of the branch upgrade, the one element that should be constantly monitored is free disk space. It isn't clear how much space is required for a branch upgrade, but remember the upgrade file is 3 GB for x86 and 6 GB for x64, plus space for temporary files. As a safe bet, keep to the Windows 10 specifications for free disk space of 16 GB for x86 and 20 GB for x64.
- Targeting: As mentioned in the Branch Upgrade Strategy, enterprises need to plan on having a system on multiple branches. This will require that users and computers are assigned to groups identifying them with their branch. Once done, you need to plan on targeting migrations appropriately (for example Current Branch to Current Branch).

- H
 - Off-Network Systems: In many enterprises, a significant minority if not a majority of clients will be laptops, many of which spend little time on the corporate network. With such systems, there must either be the option to upgrade them remotely or have a planned upgrade when they are on the network.
 - **Distribution:** As upgrade packages are large, enterprises will need a plan for how the package will be distributed and cached. The existing software delivery architecture needs to be ready for 4 GB files, as that is the size of the 1511 x 64 package.

"Establish a formal, appropriate, and repeatable testing methodology to ensure that issues are identified and categorized."

 "Preparing for Windows 10 PC Deployment", Stephen Kleynhans, Gartner, 28 April, 2016

4. Upgrade Rollout Model

In the section on Windows 10 Branch Upgrade Strategy, we outlined different models and timelines for how to roll out your upgrades. Create a similar rollout model for your organization, making sure you've nailed down these key elements:

Rollout Groups: Hopefully you've already structured your organization into groups for patching, software rollouts, and previous operating system migrations. If you haven't, now is the time to do so. At a minimum, have a pilot or test group and a production group. It's very likely you'll have more than one of each. Here are some examples of pilot groups and production groups to get you thinking:

	Pilot		Production		Considerations
Group 1 - IT	 Start here—should have the most communication with these individuals. They should be technical enough to provide detailed feedback if issues are encountered. 	Group 1 – Non- critical Users	 Determine systems and users won't cripple the business if the upgrade has issues. Different departments may be more critical at different times of the year or quarter (sales, finance, etc.). Time of year could merit breaking group into two or timing it very strategically. Make sure you understand your organization before assigning people to groups. 	Timing	 Each rollout group should have a set time in which the upgrade occurs. Remember 80/20 rule—likely 80% will upgrade quickly, but you'll need to work for the other 20%. Making sure business continuity and SLAs are maintained is main goal. If you have three months for pilot group 1, get upgrades completed the first month so remaining two months can be used to assess impact.
Group 2 - Power Users & App Owners	 Find tech heads from different departments who will provide feedback on issues. Find business application owners who aren't in IT. If you don't know these people, start networking internally. They will surface if you ask. 	Group 2 - Critical Users	 This is the phase to address those critical users like sales, finance, or service delivery. This phase may need to be paused depending on the time of the year or quarter. 	Accept Criteria	 Define success before moving to the next phase. Is it 100% desktop usability (or 95%)? Is it based on a review of all critical incidents? Who makes the approval decision? Your level of criteria may also escalate based on the level of criticality of users and systems.



Pilot		Production	Considerations	
	Critical Systems	 Includes systems that impact business in terms of generating review or delivering a service or product to a customer. 		
		 Example: Includes systems that control medical devices. 		
		 Again, timing may be critical here, but understanding your business is paramount. 		

5. Upgrade Rollout Model

One can expect a certain percentage of systems to have issues during the upgrade process. Part of the solution architecture should take into account how to address issues so as to not slow down the overall rollout and to ensure that systems are upgraded before patch support is discontinued.

There are likely many areas of preparation, but here are two specific areas to plan for:

- Hardware: Two examples: Do drivers impact the upgrade? Are storage limitations an issue?
- **Application compatibility**: This is likely the No. 1 issue you'll run into. What business and third-party application teams/vendors do you need to call on when encountering issues? If a compatibility issue becomes an upgrade blocker, what's the plan?

Key Takeaways

The challenge is significant, so is the solution. Here are the key points to share around an upgrade solution architecture:

- Upgrade Education: Prepare your users for the changes
- End-User Communication: Remember to communicate expectations before, during, and after the upgrade
- Solution Preparation: The solution architecture must be robust and automated
- Upgrade Rollout Model: Break your enterprise into groups and upgrade methodically
- Issue Management: Windows 10 forces tight timelines so prepare for issues in advance

With the solution architecture set up, we will next explore how Ivanti can help with Windows 10 branch upgrades.

Managing Windows 10 Branch Upgrades with Ivanti

This section discusses managing Windows 10 branch upgrades with Ivanti solutions. There are many elements of a solution architecture and this section will cover the mapping of Ivanti products to that architecture.

Upgrade Education

As mentioned earlier, Windows 10 branch upgrades are disruptive. If someone hasn't experienced this before, they may do something stupid like powering off their computer in the middle of the upgrade process (never a good thing). A solid knowledge base article will go a long way to educate them.



"Remember, Windows 10 is intended to be a work in progress, upgraded continually."

—"Everything you need to know about Windows 10," Woody Leonhard, InfoWorld.com Deep Dive Series

Sample knowledgebase article to communicate the upgrade process to users:

As you may be aware, Microsoft released an update for Windows 10 known as the Anniversary Update or version 1607. IT is currently testing this update and will begin rolling it out widely in (month).

As with other Windows 10 updates, your ability to work will be disrupted. IT is planning to launch the upgrade at noon when we expect you can step away from your computer. You'll have the option to defer the upgrade if you fear it will be too disruptive to your work. We advise saving all documents and shutting down applications to minimize any potential loss of work.

When the upgrade begins, you will see the following screens. Do not power off your computer during any of the upgrade process.



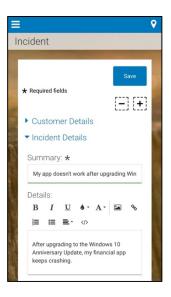


Once the upgrade is complete, you'll need to log in and wait for some additional configuration to occur. You will see one of the following messages: "We've updated your PC", "All your files are exactly where your left them", "We've got some new features to get excited about", or "Don't turn off your PC". Should you have any issues with the upgrade, please contact IT and we will assist you promptly.



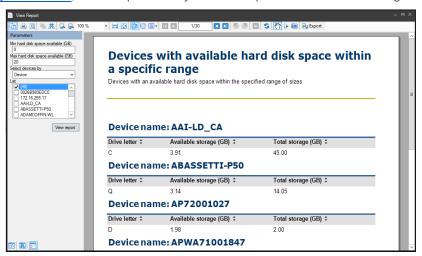
Upgrade Communication

- Pre-Upgrade Application Owners: Email is often the default method of communication, but there are other options. Using Ivanti Workspaces, application owners can be alerted of pending upgrades via a Notice Board message.
- Pre-Upgrade End Users: The obvious solution is to send an email (or series of emails) with the information listed in the example knowledgebase article. With the Ivanti End User Workspace, that information can be accessible anywhere: web, desktop, or mobile device. Putting the information everywhere will increase the likelihood of users knowing about the upgrade beforehand.
- Upgrade Launch: Ivanti Patch for Endpoints, allows user notification before the download and/or before the execution of a branch upgrade. This can be a last-minute opportunity to inform the users of the process that will ensue.
- **Post Upgrade:** After an upgrade, users can submit issues or be notified of information via the Ivanti End User Workspace (as shown here).

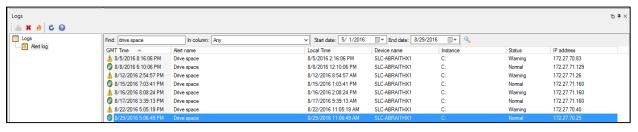


Solution Preparation

Upgrade Readiness: The large size of branch upgrades elevates the need to monitor free disk space. Using the inventory capabilities of Ivanti Management Suite, one can periodically review a report to see who is running out of space.



If a manual report is a hassle, alerts can also be generated to automatically prompt for action.





Solution Preparation - Upgrade Readiness (continued)

Targeting: Ivanti Patch for Endpoints will inventory all the hardware, software, branch type (Current Branch or Current Branch for Business), and Active Directory users and groups to use in targeting of branch upgrades. This targeting becomes particularly valuable when used for staged rollouts (see more in next section).

Distribution: With the need to push large upgrade files, a robust software distribution capability is a must. Ivanti Patch for Endpoints has numerous capabilities for distributing branch upgrades efficiently across your network, including:

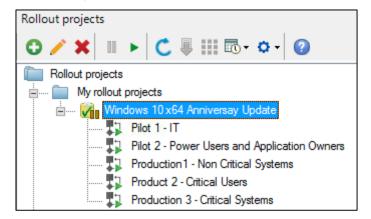
- Targeted multicasting
- Peer-to-peer downloading
- Bandwidth throttling
- Distribution servers
- Checkpoint restart



Off-Network Systems: How many of your enterprise clients are off the corporate network at any given time? With so many employees who work remotely or travel, the Ivanti Cloud Services Appliance enables management of systems without a VPN. Using a virtual or physical appliance, the Cloud Services Appliance can enable branch upgrades to occur anywhere.

Upgrade Rollout with Ivanti Patch for Endpoints

Having a methodical rollout process is critical in large enterprises. Ivanti's patching technologies includes a new capability, Rollout Projects, for rolling out patches or branch upgrades systematically. This feature is ideal for automating the deployment and execution of branch upgrades to specific groups of computers in a specific order.



As part of the automation, each step can have exit criteria before moving on. Such criteria include:

- Minimum success rate of systems upgraded
- Minimum duration of executing that step to give time to identify potential issues
- Email approval if you need manual change control to proceed

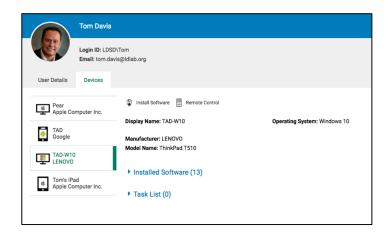
These exit criteria enable the complex process of rolling out branch upgrades to proceed automatically, but with controls to prevent issues from spreading to the next phase.



Issue Management

Addressing service issues related to branch upgrades can be achieved with <u>Ivanti Service Desk</u> where incidents can be tracked, problems managed, and service levels measured.

Unlike most service management tools, the integration of Service Desk with Ivanti Management Suite, powered by Landesk, enables service management to include taking actions such as remote assistance when users need help with upgrade issues, system reimaging when upgrades go bad, or software upgrades to maintain compatibility with branch upgrades.



Key Takeaways

As usual, here are some key points to remember:

- Windows 10 branch upgrades are complex and Ivanti helps automate this process
- Ivanti Service Desk, powered by Landesk, enables end-to-end service management before, during, and after the upgrades
- Ivanti Patch for Endpoints automates phased upgrades with network-sensitive distribution and intelligent targeting
- Ivanti Management Suite helps prepare for upgrades and address issues should they arise

While Windows migrations and updates are an ongoing concern, it's even more important that your IT organization possess a very automated, process-driven way of managing your migrations and updates. If you plan well for Windows 10 and execute systematically, the time savings for IT and the productivity for your users will increase.

Windows 10 Migrations Can Be Like Fishing without a Guide

To wrap up this white paper, Adam Smith, senior product marketing manager, provides a good analogy about how you can kick-start your Windows 10 migrations with support from Ivanti:

Finish this statement, "Give a man a fish and you feed him for a day. Teach a man to fish and you ______." If you plan and strategize right, you can do more than just give your users a new operating system. You gain valuable practice when it comes to upgrading machines continuously, no matter what Microsoft throws at you.

As the end of life for Windows XP approached, many companies—especially those operating under regulatory compliance—had to migrate large numbers of machines to Windows 7 all at once. These high-priority projects led to millions in additional costs. Much of that cost came from hiring outside consulting firms to identify needs, create a migration plan, and use their tools to perform the migration. When the experts were done, they took everything with them. Organizations were left with upgraded machines but not much else.



Get There Faster with a Guide

When navigating uncertain waters, it's best to have a guide who can outfit you with the right equipment, show you where to cast your line, and then reel in a few fish to show you proper techniques before letting you go solo.



Most organizations of any size aren't migrating everything at once. If your Windows 10 project plan calls for a phased migration that includes 1) migrating through attrition; 2) providing pushes to specific departments or groups; and 3) individual upgrade capability through a self-service portal, then Ivanti can jumpstart your practice. We'll provide the systems and the knowledge—and perform a portion of the upgrade. You gain a competitive edge and minimize the learning curve.

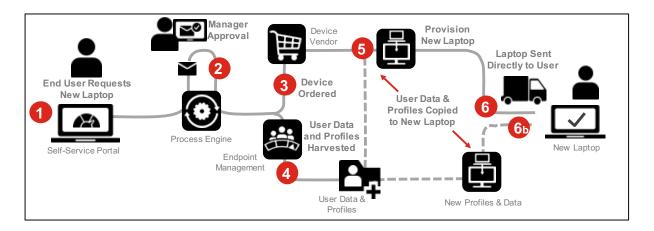
Catch More without Handling the Mess

I have an uncle who fly fishes three or more times a week. Yet, he and my aunt hate eating fish. He's an artist at catching the fish and an engineer at the "catch and release", so much so that he's got it down to a system. He uses barbless hooks and created a small device he slips onto the line to pop the fish off the hook without having to touch it. He never gets his hands dirty, despite catching 60 to 80 fish for every six to eight I reel in.

Are your provisioning processes so efficient that you don't have to touch each device? Every organization uses hardware attrition to upgrade a portion of their operating systems. Usually that means IT receives a new machine, reimages it, and delivers the device to the user who has backed up their data and profile somewhere.

Ivanti can provide practices and processes to help you deliver a device without touching it, just like my uncle and the many fish he catches. You can deliver a new machine, lay down the approved corporate OS image, provision the latest apps and drivers, and restore the user profile—all without IT needing to touch the user's device.

This process involves integrating with a distributor, such as CDW, which can fulfil an individual user order with the corporate image and uses Ivanti with AppSense solutions to extract the user profile and provision the appropriate drivers and up-to-date applications. See the following figure:



Feed Them for a Lifetime

Learn the best way to automate your provisioning and you'll be casting more often, for bigger fish, with your IT resources.

Let Ivanti be your outfitter and guide to get your Windows 10 project up and running (or working more proficiently). We'll migrate hundreds, even thousands of machines for you so you can jump-start your Windows 10 implementations. Then you'll be able to migrate, update, and patch your Windows 10 devices in a more automated fashion. After all, if you're going to do a major OS upgrade, you might as well feed your users the devices they need over many OS lifetimes.



Key Takeaways:

- 1. Provide multiple methods for migrating to achieve a phased migration
- 2. Wherever possible, automate your new-device provisioning to eliminate the need to touch each device
- 3. When using an outside resource, make sure they help you improve your provisioning practice

Conclusion

Gone are the days when you could standardize on a single version of Windows. If you're in an organization of any significant size, you'll most likely be using three or four versions of Windows branches. The pace at which the updates and patches come will require that you continuously install or update different branches on users' systems. Sounds like job security for IT, right?

"Microsoft is slamming the door on PC builders and upgraders who might have hoped to use the new Intel Kaby Lake or AMD Zen chips for Windows 7 or Windows 8 PCs. Sorry: Both chips are officially supported only by Microsoft's Windows 10."

—"Microsoft made 'em do it: The latest Kaby Lake, Zen chips will support only Windows 10,"

Mark Hachman, PC World, Aug 30, 2016

However, in the case of Windows 10, there is only a slight difference between job security and being completely overwhelmed. What will make the difference is how solid your plan is and how much you automate your testing, piloting, and rollout processes. In fact, you may have to skip the testing and make that a part of your piloting process.

No matter how you choose to upgrade or update your Windows 10 machines, your plan should include the following:

- Device migration what devices to migrate and how
- Upgrade model or path
- User targeting rollout groups
- Migration method push vs. self-service or both
- User education and communication
- Reporting and key performance indicators
- Expertise that can help you get up and running and show early success

When you have the proper strategies and plans in place, you'll consistently maintain the latest Windows 10 operating system on users' devices, and updating and upgrading won't pose the anxiety it does for many organizations today.

Power up those Windows 10 devices—you've got game!

Visit www.lvanti.com for information on secure remote control, power management, and additional features.

Visit our website: http://www.ivanti.com Speak with a representative: 1.800.982.2130 Email us at: sales@ivanti.com
For specific country offices visit: http://www.ivanti.com

