



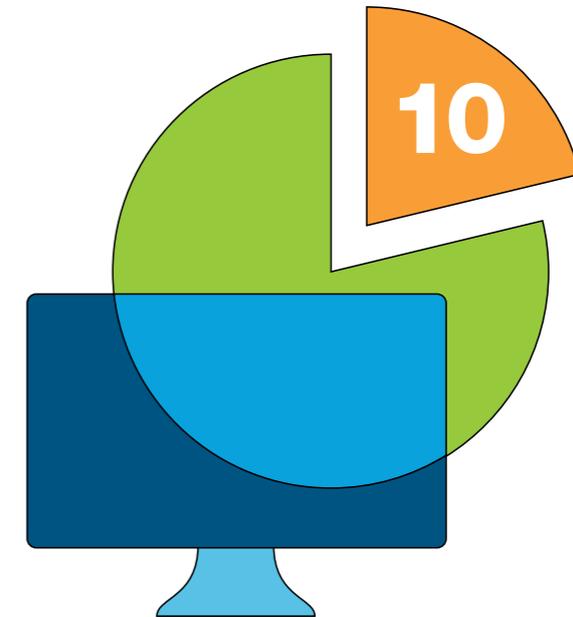
Windows 10 Primer: Five Key Takeaways About Branches and Cumulative Updates



INTRODUCTION

Are you ready to manage Windows 10 updates? Does the thought of it exhaust you already?

Ivanti has received many questions on this topic, and every time Stephen Brown, Security Consultant, has sat down to write something, it has expanded into a lengthy essay. The good news is that this eBook chunks the conversation into a series of digestible articles that walk you through managing Windows 10 updates. These articles may need some refreshing over time, but they'll help you understand what you need to know to make decisions as you roll out or continue to roll out Windows 10.



Windows 10 now accounts for **21% of Windows installations.**

NetMarketShare

WINDOWS 10 UPDATES OVERVIEW

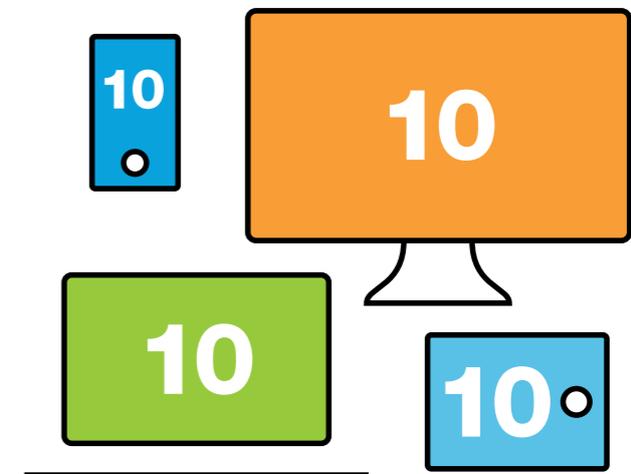
There are essentially two main update types with Windows 10:

1. Branch upgrades
2. Cumulative updates or patches

Both types are new for Windows 10 and there is considerable detail on each, so we'll break each mechanism into multiple sub-topics. What we've seen from Microsoft can be confusing due to the complexity and ongoing changes.

First Update Type: Branch Upgrades

Consider this and the following section to be teasers on upcoming topics. While Windows 10 cumulative updates came before branch upgrades, it's important to understand branches and upgrades before diving into cumulative updates. As you roll out Windows 10, you must consider: 1) branch upgrade process and size; 2) branch frequency of releases; 3) branch types; and 4) the implications of what branch is selected. You should be prepared to dig into the details.



Microsoft confirmed that **Windows 10 is now powering 350 million devices.**

Drew Smith, June 29, 2016

Second Update Type: Cumulative Updates or Patches

The Windows 10 updates or patches upgrade type is different than anything else Ivanti has experienced with previous versions of Windows. We'll touch lightly on this type of update in this eBook and discuss it further in blog posts and publications related to patching and security.

We know you're busy, so each article in this eBook includes a concluding section of key takeaways you can pass on to your boss and team. Here are the key takeaways for the Introduction:

- Windows 10 has new update mechanisms: branch upgrades and cumulative updates
- Each mechanism is significantly different than update mechanisms used with previous versions of Windows
- It's critical to understand the impact of Windows 10 updates to keep your environment stable and secure



Windows 10 is inevitable for PCs. Eventually, every organization will run it.

*“Ten Things You Need to Know About Windows 10 for a Successful PC Deployment;” Gartner, Inc.,
27 July 2015*

WINDOWS 10 BRANCHES OVERVIEW

Now that we've established an introduction to managing Windows 10 updates, let's explore branches. Understanding Windows 10 branches is critical to managing Windows 10 updates efficiently.

Branches are the new mechanism that provide a large set of new features and fixes to Windows 10. It would be unjust to simply say that Windows 10 branch upgrades are like service packs, but this is the closest comparison. In reality, branch upgrades are somewhat between a service pack and operating system upgrade. They are similar to a service pack in that they are a combination of new features and fixes, but they differ in frequency, size, and upgrade impact to the end user.

Branch Types

Unlike service packs, there are multiple type of branches. Here is a summary of branch types and key attributes:

Branch	Release Frequency	Minimum Support Length
Insider Preview	Continuously	NA
Current Branch (CB)	2-3 times a year	4 months
Current Branch for Business (CBB)	~4 months after CB	8 months
Long-Term Servicing Branch (LTSB)	2-3 years	10 years



Long-Term Servicing Branch (LTSB) is similar to what we used to think of as a major Windows upgrade every 2-3 years.

WINDOWS 10 BRANCHES OVERVIEW (continued)

Branches Versus Service Packs

To better understand how Windows 10 branches compare to older versions of Windows service packs, let's look at a few key attributes:

	Windows 10 Branches	Older Windows Service Packs
Release Frequency	Varies by branch type	Every few years
Size	Incremental to 4 GB*	½ to 1 GB
Upgrade Impact on User	High	Medium
2-3 years	10 years	

*Depends on branch type

Size Matters

If you thought service packs were big, get ready for branch upgrades. In reality, these are a complete install of the operating system from which you could create an initial image. These beasts will have a much bigger impact on your network and local storage than service packs of yesteryear. The following table will help you understand Windows 10's 1511 branch upgrades in comparison to older Windows service packs.

Windows Update	Size x86 (MB)	Size x64 (MB)
Windows Vista Service Pack 2	475	745
Window 7 Service Pack 1	542	912
Windows 10 1511 ISO	3,400	4,116



Windows 10 Update is more than four times the size of a Windows 7 Service Pack update.

WINDOWS 10 BRANCHES OVERVIEW (continued)

Key Takeaways

Remember to share these takeaways with your peers and boss:

- Windows 10 branches are the new service pack, although much different
- Differences include being bigger, released more frequently, and having a higher impact for upgrading
- There are four branches to choose from: Insider Preview, Current Branch, Current Branch for Business, and Long-Term Servicing Branch

Now that we have the basics down, let's dive into the different branches, starting with the Insider Preview Branch.



There are four branches to choose from: **Insider Preview, Current Branch, Current Branch for Business, and Long-Term Servicing Branch.**

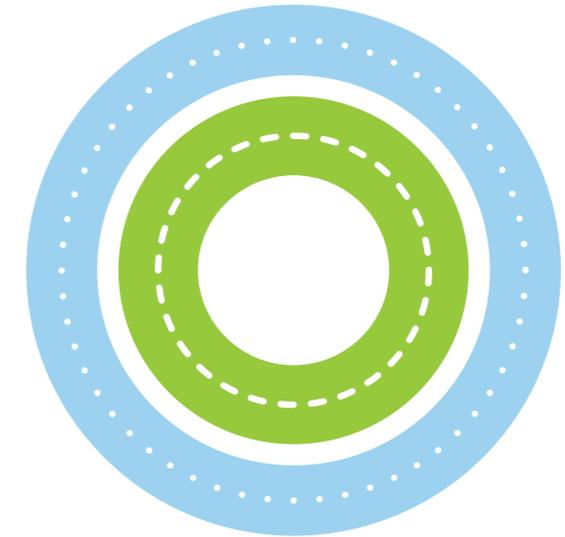
INSIDER PREVIEW BRANCH— FAST AND FURIOUS

The preceding Windows 10 Branches Overview section set up this Windows 10 Insider Preview Branch conversation. The Insider Preview Branch may be viewed as only useful for tech heads, but there is value to using it for gaining early insights into new features and potential issues that can arise from future branch upgrades. There are many nuances that should be understood before considering this branch.

Here at Ivanti, Rex McMillan, from product management, has been running the Insider Preview for more than a year. Much of the following insights come from his experience.

Signing Up

Joining the Windows 10 Insider Preview is fairly easy. One simply goes into Settings > Update & Security > Windows Update > Advanced options. Using a Microsoft account, you can register and configure your computer for the Insider Preview. Microsoft has simplified the process of becoming an insider. A growing community of insiders are testing and helping improve Windows. Insiders receive invitations to exclusive events. There are also incentives to encourage participation in the reporting of issues and the quests.



Microsoft confirms that users enrolled in the Insider Program have participated to an unprecedented degree in installing and testing the latest builds. **More than 50,000 years' worth of hours have been spent by people in the Fast ring and Slow ring modes.**

*Fahad Ali, "Insiders Behind Over 5,000
New Changes In Windows 10;"
July 25, 2016*

INSIDER PREVIEW BRANCH (continued)

Updating

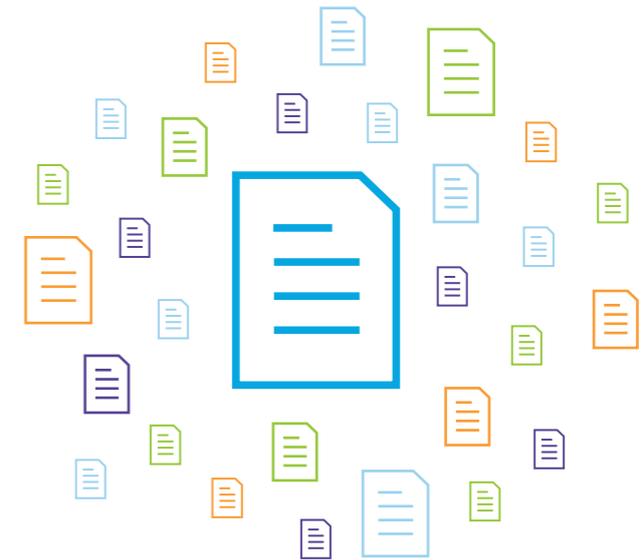
When builds are available, you will be notified and can proceed with an update. These are frequently large updates where the computer needs to download a lot of product, reboot into a Win PE mode, update, then boot to normal Windows. In a recent build, Rex McMillan observed that it took over 20 minutes to update his computer to the latest build in the Fast ring.

General Experience

Rex has many insights on using the Insider Preview Fast ring. While he's never been burned with a build, he's heard of people running into hardware compatibility issues. In the past year, Rex experienced one build that was fairly unstable and had the occasional crash bug. The biggest challenge is the time to update. He likes to plan on an hour of downtime in case any issues arise.

When to Use

Considering the instability, one might question whether to use the Windows 10 Insider Preview. The greatest advantage for an organization to run some computers on Insider Preview is early visibility into changes that may affect future Current Branch or Current Branch for Business builds.



Windows Insiders logged in over 75 million pieces of feedback, resulting in more than 5,000 changes and enhancements to the Anniversary Update.

*Fahad Ali, "Insiders Behind Over 5,000 New Changes In Windows 10;"
July 25, 2016*

INSIDER PREVIEW BRANCH (continued)

Insider Preview provides a Feedback Hub to review known issues and submit bugs. One could also run some systems on Current Branch and the bulk of other systems on Current Branch for Business to also provide early insight on potential conflicts to the end user environment. The other (and probably more important) reason to run Insider Preview is to get familiar with the never-ending stream of new features that are coming your way.

Key Takeaways

Here are the key takeaways for Windows 10 Insider Preview:

- Comes in two update frequencies: fast (one to three times a month) and slow (every few months)
- Can be used to test against system baselines for early warning of issues
- Will be disruptive and should only be used by highly technical users with strong connections to IT
- Should not be deployed widely on production systems



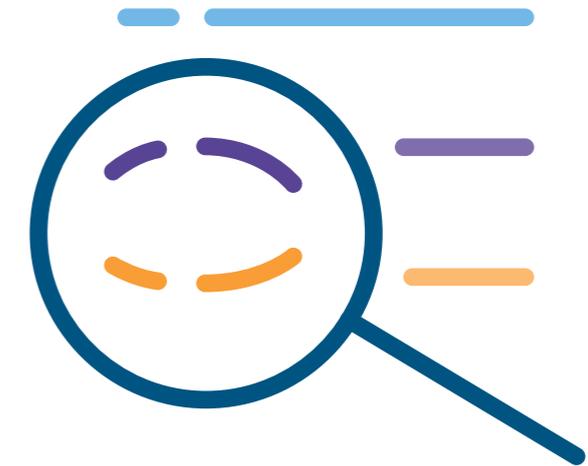
(Insider Preview) Can be used to test against system baselines for early warning of issues

CURRENT BRANCH— MOST COMMON

Windows 10 Current Branch is the default servicing mode for Windows 10, providing stable updates on a regular cadence. It updates at a much faster pace (two to three times a year) than previous versions of Windows Service Packs (every few years), and the updates are large and more disruptive.

Branch Upgrades

Current Branch will release upgrades two to three times a year. To date, Ivanti has the GA release (1507), the November 2015 update (1511), and the latest Anniversary Update (1607). If it isn't clear, the nomenclature is Year Month (YYMM) for the versioning. There are also regular updates (Patch Tuesday, etc.).



There are around **30% more Bing search queries per Windows 10 device** versus prior versions of Windows.

Joel Hruska, January 7, 2016

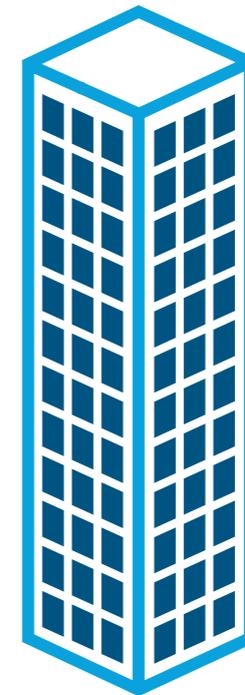
CURRENT BRANCH (continued)

Branch updates are large, serving as both full installs and upgrades. The 1511 ISO is a whopping 3.3 GB for x86 and 4.0 GB for x64.

As noted in the Windows 10 Branches Overview section of this eBook, branch updates are more like OS upgrades than Service Packs. The other big difference is the user experience of a branch upgrade versus a service pack. Branch upgrades will reboot the computer or at least put it into an update mode where the user cannot do anything.

In Stephen Brown's testing on a virtual machine with 2 GB of RAM and 1 processor core of his 2.3 GHz i7 processor, the reboot \ update mode portion of the update took just under 25 minutes from reboot to desktop usability, which for most end users and businesses is an eternity of down time. The size of the upgrade and the impact to users are key reasons to use a patch management solution to optimize this process.

Win10



Windows 10 is an inevitable migration and will be high on the priority list of all end-user computing leaders from 2016 onward.

Stephan Kleynhans, "Deciding When to Migrate to Windows 10;" Gartner, Inc.

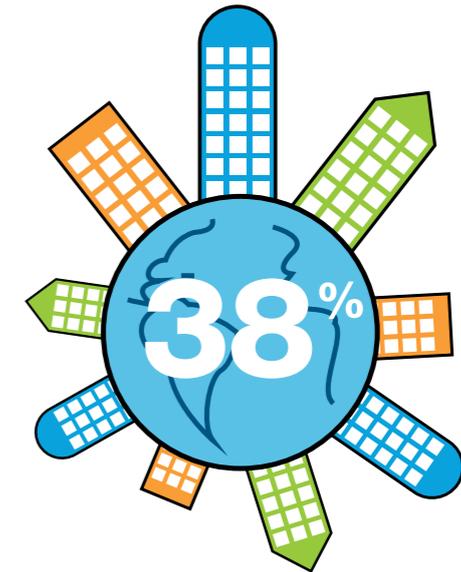
16 October 2015

CURRENT BRANCH (continued)

Update Lifespan

Here is one of the great mysteries of Current Branch. In Microsoft's article on Windows 10 servicing options for updates and upgrades, one is inclined to believe that security updates will only be provided on the latest Current Branch. In reality, Microsoft is providing security updates for 1507 and 1511 branches.

Our understanding is that current and previous branches will continue to receive updates until the subsequent branch has been declared a Current Branch for Business. In other words, 1507 (and 1511) will be serviced until the Anniversary Update (1607) is declared Current Branch for Business. At that time, 1507 will no longer receive updates. We'll see if this holds true. If so, you should be updating your 1507 systems to 1511 today to be ready.



As of June 30, 2016, **38% of organizations across the globe have adopted Windows 10.** Of those, a majority (58%) have implemented and the rest (42%) are still testing.

*Spiceworks Windows 10 Adoption:
Sprinting out the Gate; June 30, 2016*

CURRENT BRANCH (continued)

When to Use

For many smaller businesses, Current Branch could be the preferred option. For larger businesses however, Current Branch may not be ideal due to the frequency of updates and potential disruption to application stability. In that case, businesses will want to consider Current Branch for Business, which adds multiple updates to fix issues. That said, businesses may want to take the same approach discussed in the Windows 10 Insider Preview Branch section of this eBook, using Current Branch as an early indicator of desktop instability. Unlike Insider Preview, Current Branch will be far more stable and provide at least four months of preview before Current Branch for Business is released.

Key Takeaways

Here is a summary of Windows 10 Current Branch:

- Current Branch is the default update cadence for Windows 10
- Expect updates two to three times per year
- Current Branch upgrades are large (3-4 GB) and are more like an operating system upgrade than a service pack in previous versions of Windows
- Security updates are supported for current and previous branch once the current is declared a Current Branch for Business
- Stability is high, but Current Branch for Business will provide additional time to assess compatibility



Security updates are supported for current and previous branch once the current is declared a Current Branch for Business.

CURRENT BRANCH FOR BUSINESS—READY FOR ENTERPRISE

Windows 10 Current Branch for Business (CBB) is very similar to Current Branch, but with a slower adoption timeline and longer support life. This extended period allows Microsoft time to gather feedback on new branch features and provide fixes.

To date, there have been two CBB releases. The first was the 1507, or GA release. On April 8, 2016, Microsoft declared 1511 (with the inclusion of the March 2016 cumulative update) as the next Current Branch for Business, making it the second release. To date, this second release has yet to be made available, but will be published to Windows Update as well as on the Volume Licensing Service Center and MSDN. It is a bit perplexing that it takes more than a month to publish the update, but this is the first CBB update. We'll see how subsequent updates proceed.



It appears some organizations are perfectly content idling at the starting gate. But among those who do plan to implement Windows 10, 11% plan to do so within the next 12 months, an additional 22% plan to in one to two years, and 16% plan to within two or more years.

Spiceworks Windows 10 Adoption: Sprinting out the Gate; June 30, 2016

CURRENT BRANCH FOR BUSINESS (continued)

Configuration via Checkbox

One small checkbox switches Windows 10 to Current Branch for Business. Unlike Insider Preview that requires enrollment, all that you need to do to move to Current Branch for Business is select the “Defer Upgrades” checkbox found under Settings > Windows Update > Advanced Options dialog.

Using Local Policy or Group Policy Settings, you can also set the upgrade to defer for up to eight months after it has been made available. A smart strategy would be to roll out the update gradually to assess impact to your environment.



Defer upgrades should be synonymous with a corporate choice, whereas Automatic-Give me updates... would be more of a consumer/home use choice

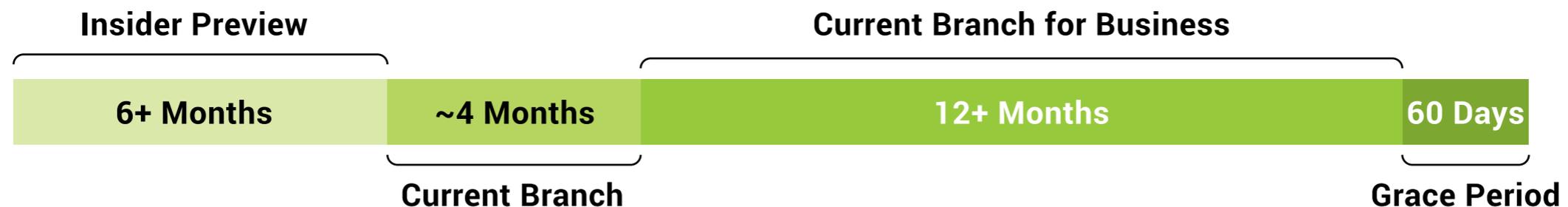
CURRENT BRANCH FOR BUSINESS (continued)

Branch Upgrades

Windows 10 Current Branch for Business is expected to upgrade in a very similar manner to Current Branch. Review the eBook section on Branch Upgrades for Windows 10 Current Branch to understand the upgrade. As noted on the Current Branch, this isn't a Service Pack. This process is more like an operating system update in terms of size, time required, and impact on the user.

Update Lifespan

Microsoft notes that Current Branch for Business will have a minimum servicing length of eight months. It also appears that servicing will be provided for current and previous versions of Current Branch for Business. We have yet to experience a third branch and the anticipated loss of support for the oldest branch for servicing updates. This likely scenario should push you to start rolling out the newest branch to the systems on the oldest branch as soon as it is made available. This will avoid leaving those systems without support for security updates.



CURRENT BRANCH FOR BUSINESS (continued)

When to Use

For any business where desktop stability is important, Current Branch for Business is a good choice. Current Branch will introduce many new features and changes that create potential risk, whereas Current Branch for Business will have at least four months of fixes included.

Key Takeaways

Summary for Windows 10 Current Branch for Business:

- CBB is Current Branch with some fixes typically delivered four months after the Current Branch release
- Upgrades can be deferred another eight months
- The upgrade process will be significant just like Current Branch

Current Branch for Business still updates at a pace far beyond what we've experienced with previous versions of Windows. Minimizing the frequency of feature updates is best addressed with the Long-Term Servicing Branch, which is the topic of the next section in this eBook.



8 MONTHS

**(CBB) Upgrades
can be deferred another
eight months**

LONG-TERM SERVICING BRANCH—AVERSE TO CHANGE

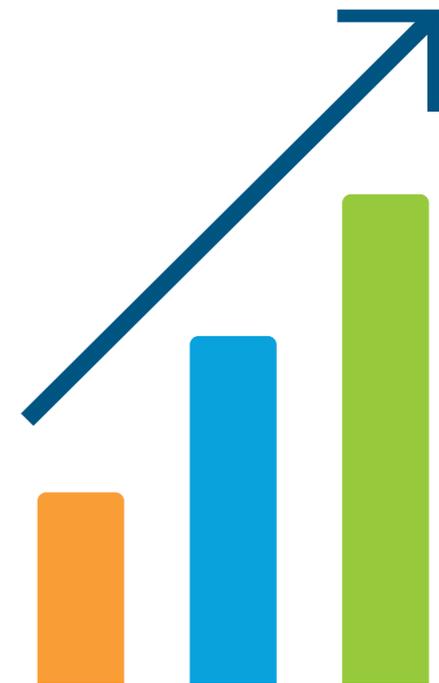
Windows 10 Long-Term Servicing Branch (let's just call it Windows 10 LTSB or LTSB) is designed for systems that are sensitive to change and require a high level of stability. This increased stability comes at a cost—both in real money and loss of certain features.

Differences in Windows 10 LTSB

The most significant difference and the reason why many businesses will want to consider Windows 10 LTSB is the update model. Unlike other branches, LTSB is targeted to only receive feature updates every two to three years. It will also have a longer security update lifecycle with support for 10 years. Ivanti's Stephen Brown likes to call Windows 10 LTSB "Windows as we know it."

In addition to the different servicing model in LTSB, there are some elements that you won't have in Windows 10, including:

- Microsoft Edge Browser
- Windows Store
- Universal Office and some Universal apps



DIFFERENCES IN WINDOWS 10 LTSB (continued)

Some might actually view the lack of these features as a positive as the Edge browser only held 1.2% of usage in April 2016 according to w3schools.com and 4.7% according to NETMARKETSHARE. Either way, Edge isn't exactly showing a lot of adoption 10 months into its life.

Concerning the Windows Store, many businesses would rather not have it enabled for end users since it has a strong consumer slant with many games and entertainment that don't drive productivity. Microsoft would rather see Windows Store enabled. The company recently removed the ability to disable the Windows Store with GPO policy in all versions except Education and Enterprise.

Installing Windows 10 LTSB

Unlike other versions of Windows 10, LTSB is a separate install meaning no ability to move to or from Current Branch or Current Branch for Business without a complete reinstallation. Because of the need for a full reinstall to move from LTSB to other branches and vice versa, organizations should be thoughtful when using LTSB.

Once installed, it looks and feels very much like other Windows 10 branch versions minus the missing features discussed previously.



With the LTSB you get less for more. It will cost you more to get less features—what you do get is more stability.

LONG-TERM SERVICING BRANCH (continued)

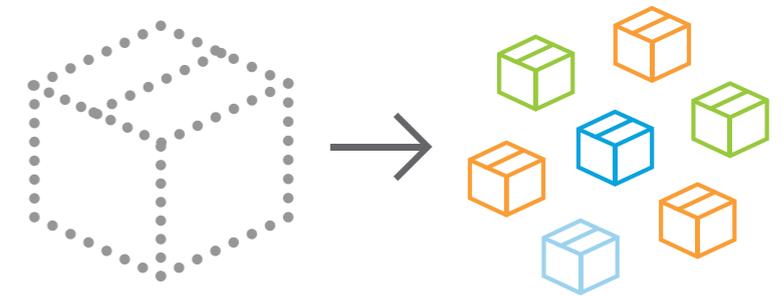
LTSB = \$\$\$\$

So here is the bad news: Windows 10 LTSB will require special licensing. It is only available in the Enterprise edition (sorry Education customers) and with Volume Licensing (sorry SMB and smaller enterprises). For a full edition (not branch) comparison, reference Microsoft's Compare Windows 10 Editions site.

Stephen Brown has heard mixed feedback on pricing, but most customers say the cost to add LTSB has been significant and prohibitive. There is one customer for whom the cost was reasonable. Bottom line, if you want LTSB, plan to spend some extra money and get your best purchasing person involved for pricing.

When to Use

Microsoft will say that Windows 10 LTSB is targeted for highly change-sensitive computers such as manufacturing control systems or medical device control systems. That said, the high upgrade frequency, risk of new features, and short sustaining life of Current Branch and Current Branch for Business may prompt organizations to want to use LTSB on many other systems.



Windows 10 will replace future major upgrades with a series of ongoing smaller updates. Enterprises will have to adapt change management and deployment processes.

"Ten Things You Need to Know About Windows 10 for a Successful PC Deployment;" Gartner, Inc., 27 July 2015

LONG-TERM SERVICING BRANCH (continued)

Key Takeaways

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

- Windows 10 LTSB is similar to older versions of Windows, with new features added every two to three years
- LTSB does not have some of the newer features such as the Edge browser
- Windows 10 LTSB is a separate install and can only be purchased in the Enterprise edition via Volume Licensing
- LTSB is designed to minimize changes, which is good for change-sensitive computers or organizations

In April 2016, **the Edge browser held only 1.2% of usage and 4.7% of usage** according to w3schools.com and NETMARKESHARE, respectively. However, you don't get the Edge browser in the LTSB.

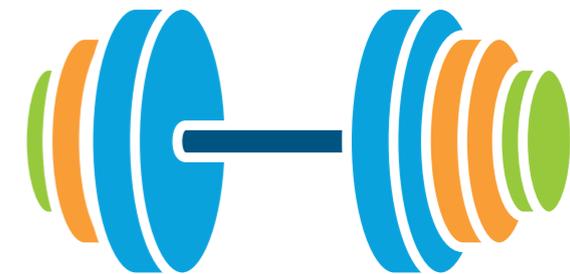
CUMULATIVE UPDATES AND PATCHES

Microsoft is moving away from releasing individual patches and instead rolling all of their updates, patches, and additive features into what's called "Cumulative Updates". Although all of these changes and updates are delivered all at once, you can't pick and choose which patches and content you want to update. It's all or nothing, which will impact how you evaluate each cumulative update.

This process allows Microsoft to streamline certain engineering and testing processes, so they can deliver more in a timely manner. It will be up to each organization to test and determine which cumulative updates they'll deploy.

This new way of delivering patches and updates has created a few concerns – 1) The size of the update to move around the network and 2) there's more in each update that could break something in your environment. Microsoft, however, is moving to this same cumulative update model for all of their major Windows updates, including those for Windows 7 and Windows 8.

If your organization is holding back from moving to Windows 10 because of the intense update schedule and the size of the updates, you'll now have to address this issue whether you migrate or not.



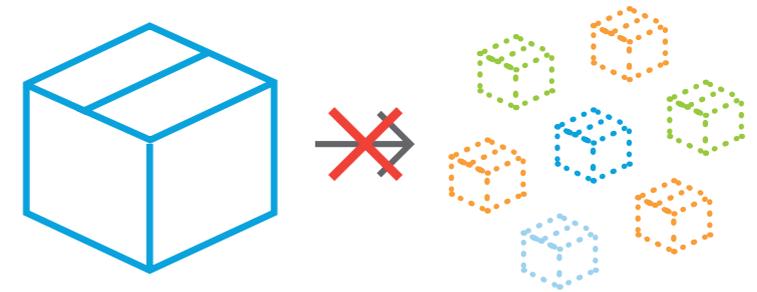
Historically Cumulative Patches have grown at a rate 6.4% per month.

CUMULATIVE UPDATES AND PATCHES (continued)

Key Takeaways

Just a few points to remember as you plan for Windows 10:

- Patches and updates will come once a month, which you either choose to deploy or not
- Cumulative patches cannot be broken apart so you can deploy only the patches you want
- Microsoft is moving all of their OS updates to this same delivery model—it's no longer just a Windows 10 issue



Cumulative patches cannot be broken apart so you can deploy only the patches you want.

RECOMMENDED NEXT STEPS

Once you understand the different upgrades and branches from Microsoft, you can better identify and plan what your upgrade and branch strategy will be. As you roll out Windows 10, you must consider branch upgrade process and size, branch frequency of releases, branch types, and the implications of what branch is selected.

We recommend that you first assess which features and benefits your organization must have in order to merit an upgrade. Also identify how often you're willing and capable to do updates. You'll gain an idea of how averse you are to change vs. feature updates.

Next, assess what your risks and concerns are for upgrading. Armed with this information, it will become more clear what strategy you should select and then you can build a more detailed plan around your migration and upgrade/branch strategies.

To discuss in more detail how we can assist you in updating and maintaining your Windows 10 devices, please contact us:

**Speak with a representative:
1.800.982.2130**

**Or email us at:
sales@ivanti.com**

**For specific country offices,
visit www.ivanti.com**