

# THE APPLE BARREL

the **JOURNAL** of the **HOUSTON AREA APPLE USERS GROUP**

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iPhone 8 Plus, and iPhone X pg 8.

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## iPhone X



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## October 2017

It's boo month: time for all the goblins and witches to come out. You just don't want them to invade your computer. Apple has released all of the OS updates; have you upgraded yet? It could be a scary experience or it could be nothing.

I installed iOS 11 and everything seems to work. I have one game that is still a 32-bit game that does not work. It is also an orphan because no one is supporting it. Other than that everything seems to be working. I have had to install more updates than I remember.

I am taking Jonathon's and Dr. Macs' advice and holding off on installing Mac OS 10.13. The changes to the file system have me more than a little worried. I will wait for the "All Clear." I read the Ars Technica review of the new macOS and it gave it generally positive comments. Other than the file system this is an under the hood upgrade. Most of the changes are refinements. There are very few changes to the look and feel.

I don't own an Apple Watch so I can't comment on watchOS or tvOS. Is anyone thinking about getting an LTE watch? That feature looks very interesting. If you keep up with the tech press the iFixit folks have already dissected the iPhone 8 and Watch Series 3, to find that not much can be repaired. I like the wireless charging feature of the new phones. That will make it easier for some folks who have a hard time getting the connector into the phone.

Thanks again to Reagan Atkinson of Houston Camera Exchange for a great presentation on the state of digital photography. This month we have a great presenter: Dave Hamilton of the Mac Observer and Mac Geek Gab, discussing the new Apple operating systems. This will be Dave's second appearance at HAAUG. Please mark your calendars for that meeting.

I mentioned it at the last meeting several of our group were hit with flooding and chased from their residences. I don't think that we will have an event on that scale again soon but it could happen. How are you going to preserve your computer, and protect your vital data? Yes, it is good to keep scans of vital documents on your machine or in the cloud but without a computer you may have a hard time getting the data when you need it. I watched the coverage of the flood in my office as my den flooded. I kept worrying it the next big dump truck that drove down flooded Rice Ave would send waves into my office. Storms like Harvey, and the Hurricanes that hit Puerto Rico and the Virgin Islands demonstrate that we all must have a plan to protect our computers and data.

If your family does Halloween I hope that you have many little ghosts, goblins and vampires visit you. Just keep them out of your data!

[See "Boss HAAUG Speaks" on page 3 for September's column.](#)

# macOS 10.13 High Sierra Now Available: When Should You Upgrade?

by Adam C. Engst, TidBITS



Apple has now released macOS 10.13 High Sierra via the Mac App Store for Macs running at least OS X 10.8 Mountain Lion, going back to the MacBook and iMac from late 2009 and the MacBook Air, MacBook Pro, Mac mini, and Mac Pro from 2010. (These are the same hardware requirements as for 10.12 Sierra.) As we noted at the very start of our WWDC coverage in [“Tripping to macOS 10.13 High Sierra”](#) (5 June 2017), High Sierra is one of Apple’s smaller upgrades in the recent “tick, tock” of operating systems, including Leopard/Snow Leopard, Lion/Mountain Lion, Yosemite/El Capitan, and now Sierra/High Sierra.

However, as much as High Sierra has relatively few user-facing changes and new features, Apple is using the release to make some huge updates under the hood. High Sierra automatically converts Macs with SSDs to the new APFS file system (see [“What Apple’s Forthcoming APFS File System Means to You,”](#) 24 June 2016) and uses the new HEVC and HEIF formats for videos and photos (see [“HEVC and HEIF Will Make Video and Photos More Efficient,”](#) 30 June 2017). These infrastructural changes should modernize the Mac’s underpinnings, improve performance, reduce storage needs, and pave the way for future improvements.

The significance of those changes raises the question: when should you upgrade your Mac to High Sierra? With iOS, and even more so with watchOS and tvOS, we generally trust Apple enough to upgrade quickly, in large part because the company exercises such control over those operating systems that they can’t vary much. Plus, frankly, problems with an Apple Watch or Apple TV aren’t likely to impact your life much.

On a Mac, though, there are innumerable opportunities to stray from the straight and narrow, and many users do. If developers follow Apple’s rules, and if Apple did its due diligence during beta testing, there should be no problem with upgrading to High Sierra. But there’s no way to know if the hardware and software on your Mac meet Apple’s specs, or if Apple was able to test your particular configuration. That doesn’t mean anyone failed to do their jobs right; it’s just a fact. Add that to the fact that many of us rely heavily on our Macs to get our jobs done, and the upgrade question becomes all the more important.

Happily, if you follow Joe Kissell’s advice in [“Take Control of Upgrading to High Sierra”](#) and make a bootable duplicate right before upgrading, you have nothing to lose except perhaps time. That’s because, in the worst case scenario, you can always reformat your Mac’s boot drive and restore from your bootable duplicate. Joe has released the 1.1 version of his book now, and it includes instructions for downgrading if necessary.

That said, there’s no harm in waiting, and High Sierra doesn’t

have so many features as to make the upgrade immediately compelling (for an in-depth guide to what’s new, and much more, see Scholle McFarland’s [“Take Control of High Sierra”](#)). If you fall into one of three main groups of users, we recommend holding off on High Sierra for at least a few weeks, or until 10.13.1 comes out with the usual bevy of bug fixes:

If you can’t spare the time to deal with unanticipated problems. That’s true if you’re upgrading your own Mac or if you’re upgrading the Macs of users who you support (see [“Important High Sierra Changes for IT Admins,”](#) 11 September 2017).

If you’re uncomfortable with the tasks involved with downgrading despite Joe’s advice.

If some piece of software you rely on is incompatible with High Sierra. Developers are releasing updates, but older versions of apps may experience problems.

Users of one particular class of software should delay upgrades: those who rely on disk utilities that haven’t yet been upgraded to be compatible with APFS. You really don’t want to let an old disk utility touch an APFS-formatted drive. That could also be true of backup software. Although the developers of [Carbon Copy Cloner](#) and [Mac Backup Guru](#) have said that they’re ready for APFS, the developers behind [SuperDuper](#) have expressed more worry due to minimal documentation from Apple (nonetheless, SuperDuper 3.0B1 is available for testing).

If you do upgrade to High Sierra, make sure to maintain a Time Machine backup, since Apple has undoubtedly used its internal knowledge about APFS to update Time Machine as necessary. Up-to-date backups protect you from a multitude of evils.

Now, despite these words of caution, if you’ll excuse me, I need to finish going through Joe’s checklists so I can upgrade my main iMac.

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# 11 Things You Should Know about iOS 11

by Josh Centers, TidBITS

iOS 11 is now available, either via iTunes or Settings > General > Software Update. I've spent the last few months documenting it for "Take Control of iOS 11" — which we've updated to version 1.1 to coincide with the official iOS 11 launch.

If you've been following TidBITS, you've probably seen articles we've been writing about iOS 11, such as "A Prairie HomeKit Companion: What's Coming in iOS 11" (7 July 2017), "ARKit: Augmented Reality for More Than Gaming" (28 July 2017), and "iOS 11 to Bring Do Not Disturb While Driving" (21 August 2017).

Those articles hopefully whetted your appetite for iOS 11, but before you pull the trigger, here are 11 things you need to know.

**#1: Your Favorite Apps May Not Work** -- Don't say you haven't been warned! Adam Engst suggested this might happen in "Apple to Deprecate 32-bit iOS Apps," (15 May 2017) and Marc Zeedar told you it would in "The Problem With Abandoned Apps," (17 July 2017): apps that have not been updated to run in 64-bit mode remain on your device, but you'll receive an error message if you try to launch them.

If you're running iOS 10.3.1 or later, check Settings > General > About > Applications to see a list of which apps on your device, if any, will not run under iOS 11. If you have some important ones on that list, see if there's an update available, likely as a new app. If not, hold off on iOS 11 until you figure out a solution.

But you don't have to worry about the TidBITS News app! Thanks to Matt Neuburg, it should keep working for years to come (see "TidBITS News Shows How an Old 32-bit iOS App Becomes 64-bit," 16 May 2017).

**#2: Some Features Are Missing** -- Three major features that Apple promised for iOS 11 at WWDC are missing: Messages in iCloud, person-to-person Apple Pay, and AirPlay 2 (see "iOS 11 Gets Smarter in Small Ways," 5 June 2017).

The idea behind Messages in iCloud is that it will store your messages and attachments in iCloud (where is it storing them now?), making sync more reliable. The feature was present in earlier betas, but Apple removed it midway through the cycle for unspecified reasons. In internal beta-tester documents, Apple has vowed to bring it back later, but the company has said nothing to the general public.

Personally, I was skeptical of the feature, since it counted against your iCloud storage quota and attachments to conversation can get big. No other messaging service charges its customers for such basic functionality, and maybe someone at Apple realized that this was going too far.

Apple has also delayed person-to-person Apple Pay payments. The concept is that you can use an iMessage app to send money directly to another person via Apple Pay. Received money will be stored on a virtual Apple Pay Cash Card. It's uncertain what the holdup is, but needless to say, financial products are complicated, so it's not entirely surprising.

Apple confirmed the delay in a press release:

Coming this fall with an update to iOS 11 and watchOS 4, Apple Pay users will be able to send and receive money

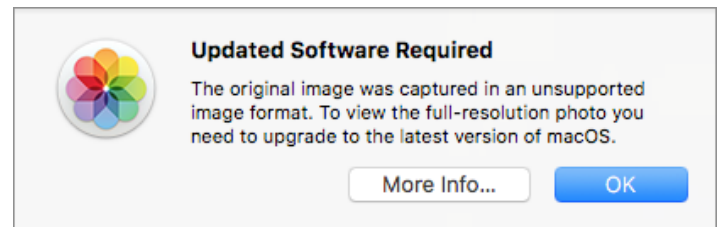
from friends and family quickly, easily and securely

Also, AirPlay 2 seems to be missing. Apple says AirPlay 2 will let you manage receivers with the Home app, output audio to multiple receivers, and work more reliably overall. However, based on my own testing, as well as AppleInsider's, it doesn't seem to be implemented yet. Strangely, Apple mentions AirPlay 2 in the developer release notes for tvOS 11. Perhaps it's implemented in tvOS, but not iOS? I suspect we'll learn more whenever Apple launches the HomePod smart speaker.

We're as frustrated by the delay of these features as you are, and I'll update "Take Control of iOS 11" as soon as they're available.

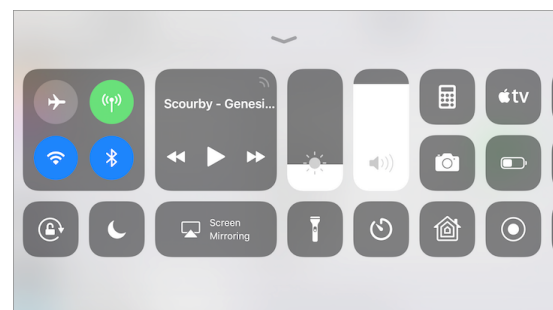
**#3: Be Wary of New Video and Photo Formats** -- By default, iOS 11 will capture videos and photos in the new HEVC and HEIF formats — assuming your device has an A10 Fusion chip or better. That means the iPhone 7 and later, and the 2017 iPad Pro models. As Glenn Fleishman explained in "HEVC and HEIF Will Make Video and Photos More Efficient" (30 June 2017), these formats provide a host of advantages, most notably reduced file sizes, but they have one big disadvantage: a general lack of compatibility throughout the industry!

Windows computers can't read these formats yet. Nor can Apple products running operating systems before iOS 11 and macOS 10.13 High Sierra. Images I've captured in HEIF on iOS 11 can't be viewed at full resolution when synced to my 10.12 Sierra-based Mac via iCloud Photo Library.



Apart from iCloud Photo Library, this shouldn't be a major issue because exporting from Photos in iOS 11 and High Sierra generates files in standard formats. And if it is a problem, you can still capture images and videos in the JPEG and H.264 formats in iOS 11 by going to Settings > Camera > Formats and selecting Most Compatible.

**#4: Control Center Is Crazy** -- One of the biggest shocks after installing iOS 11 will probably be the new Control Center. It's totally bonkers! It's so different that I dedicate an entire chapter of "[Take Control of iOS 11](#)" to it. I don't have the space to repeat it all here, but here are some quick tips and notes:



# iOS 11 (continued)

Control Center has been reduced from two or three pages in iOS 10 to a single page in iOS 11. That should reduce some confusion.

You can now customize Control Center to a certain extent in Settings > Control Center > Customize Controls. Most notably, you can add a variety of Apple-provided controls — it doesn't seem that independent developers can provide Control Center buttons. And although you can remove a few default controls, others are fixed: the networking platter, the media platter, Orientation Lock, Do Not Disturb, Screen Mirroring, Brightness, and Volume.

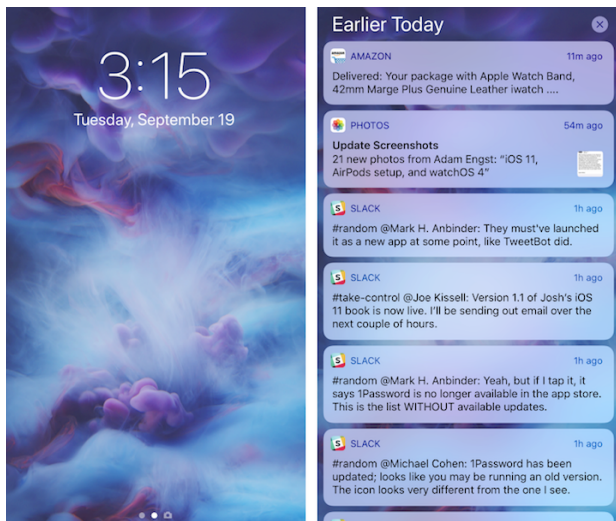
Modify which Controls appear and in what order in Settings > Control Center > Customize Controls.

I find three of the new controls are particularly useful: Low Power Mode, Screen Recording, and Apple TV Remote. Yes, there is now an Apple TV Remote in Control Center, with no app installation required. It may be my single favorite iOS 11 feature.

There are two ways to manipulate Control Center controls: tap and press. Tapping usually activates the control, while pressing reveals more options. You can experiment with each one or just read my descriptions in "Take Control of iOS 11."

**#5: So Long, Notification Center** -- In a move that seems obvious in hindsight, Apple has removed Notification Center in iOS 11, integrating its functionality into the Lock screen.

Here's how you get to notifications now. When your device is locked, the Lock screen shows only new notifications. To reveal past notifications, you can either swipe up on the Lock screen or swipe down from above the top of the screen, just as if you were pulling down Notification Center.



When your device is unlocked, swipe down from above the top of the screen to reveal the Lock screen and all of your notifications. This doesn't actually lock your device — either press Home or swipe up from below the bottom of the screen to return to where you were.

**#6: iPad Multitasking** -- Apple focused on the iPad experience

in iOS 11, giving it more unique interface features and redesigning its multitasking system.

The star of the new multitasking approach is the redesigned Dock, which looks and works more like the Mac Dock. It can hold up to 15 apps and has a section to the right which displays recent and frequently used apps. That's also where Handoff apps now appear on the iPad.

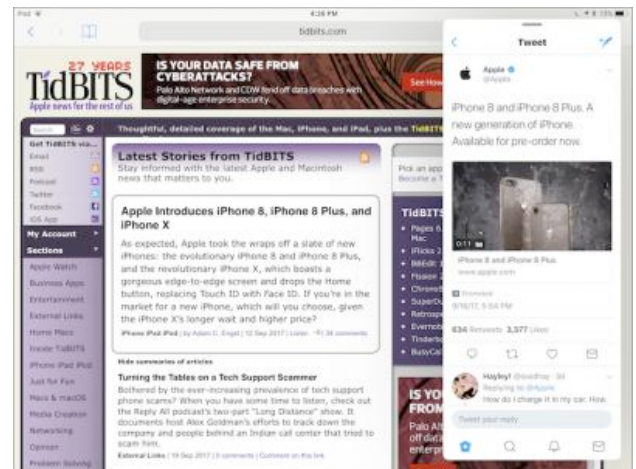
You can invoke Slide Over or Split View in several ways, but it comes down to dragging one app from the Dock or Home screen onto another active app. So you can:

While in an app, swipe up from under the bottom of the screen to display the Dock. Drag an app icon from the Dock onto the open app.

From the Home screen, start dragging any app icon, and then, with another finger (perhaps on your other hand), tap another app's icon on the Home screen or in the Dock to open it, then drop the first app.

Perform the same actions starting on the search screen, or by switching apps with the Command-Tab app switcher if you have a keyboard attached.

If you drop the dragged app on the main window while it's showing its vertical lozenge, it opens in Slide Over, which overlays the main app on the right side of the screen. Convert a Slide Over app to Split View by dragging up on the bar at the top of its window.



However, if you keep dragging that lozenge to either the left or right edge of the screen, the view changes to indicate that dropping it will open in Split View. It's great that you can now position the new app on either side.

There's so much going on with the iPad in iOS 11 that I dedicated a full chapter of "Take Control of iOS 11" to it.

**#7: Instant Notes** -- If you have an iPad Pro running iOS 11, you can tap the Lock screen with an Apple Pencil to create a new note in the Notes app (the screen must be awake, and I've found a second tap is sometimes necessary).

However, you don't need an iPad Pro and Apple Pencil to

## iOS 11 (continued)

make an Instant Note. If you add the Notes button to Control Center on any iOS device, you can tap that button to create an Instant Note when your device is locked!

You can adjust Instant Notes' behavior in Settings > Notes > Access Notes from Lock Screen. The default is Always Create New Note, but you can also set it to resume the last note you worked on, which would be handy if you're taking notes in a meeting or class.

**#8: Explaining Instant Markup** -- Every year, Apple introduces some vague set of features under a single marketing term, which I have to figure out how to explain. Instant Markup is this year's entry.

The iOS 11 release notes imply that Instant Markup means that if you tap an Apple Pencil to an iPad Pro, you can mark up whatever is on screen. That's not true, and again, you don't need an Apple Pencil.

Instead, Instant Markup features are sprinkled throughout iOS 11. Here are a few examples:

Take a screenshot by pressing Sleep/Wake and Home. A thumbnail appears in the lower-left corner of the screen. Tap it to draw on it with markup tools.

Open a photo in Photos, tap Edit, tap the ellipsis button, and then tap Markup to draw on a photo.

In Safari, tap the Share button, then Create PDF, and then the marker icon in the upper-right corner to mark up the page as a PDF.

In iBooks, tap the marker icon while viewing a PDF to mark it up.

Don't get me wrong — it's great that this functionality is available throughout iOS now. It's just that Apple's marketing is a bit misleading, and how you access it is inconsistent.

**#9: Emergency SOS** -- This new iPhone-only feature is important, but be careful with it. Press the Sleep/Wake button five times in rapid succession. You should see three sliders: Slide to Power Off, Medical ID, and Emergency SOS. Don't touch the Emergency SOS slider until you've finished reading this section!

First, just by accessing that screen, you have deactivated Touch ID (and presumably Face ID on the upcoming iPhone X). In many jurisdictions, the law says you can be compelled to unlock a device with a fingerprint but not a passcode. Keep that in mind, but remember that law enforcement and border guards can make your life miserable if you refuse to provide a passcode (see "Getting Your Devices and Data Over the U.S. Border," 14 April 2017).

As you expect, the Slide to Power Off slider shuts your iPhone off, and the Medical ID slider displays your Medical ID, which you can configure in the Health app, in the Medical ID view.

What does that scary red Emergency SOS slider do? First, it calls emergency services — 911 in the United States. After the call is completed or cancelled, it sends a text message to your emergency contacts and shares your location with them.

Here's the message it sends on my iPhone 7 Plus. There doesn't appear to be any way of modifying it:

Emergency SOS Josh Centers has made an emergency call. You are receiving this message because Josh has listed you as an emergency contact.

You set up your emergency contacts in Settings > Emergency SOS.

After it notifies your emergency contacts, it displays your Medical ID, presumably to help any emergency responders.

Remember: five quick presses of the Sleep/Wake button could save your bacon. It's worth trying it to make sure you know what's involved, but don't slide that Emergency SOS button unless it's a real emergency. We hope the feature doesn't cause too many errant calls.

**#10: Offload Apps** -- Apple has long been stingy with storage space on iOS devices, and it has always been difficult to manage storage in iOS. iOS 11 improves the situation, thanks to a new storage management screen, which you can find in Settings > General > iPhone (or iPad) Storage. It offers suggestions for various things you can do or enable to save space.

But I want to point out a specific new setting, which can also be found in Settings > iTunes & App Stores: Offload Unused Apps. This setting automatically uninstalls unused apps, but retains their data. If you later reinstall the app from the App Store, it's as though you never deleted it!

The only reason not to enable this setting is if you have way more storage space than you'll ever use. For the rest of us, it can free up space with no risk of data loss.

**#11: Quick Start** -- It's new iPhone season, and while setup isn't a great hardship, it is the most time-consuming part of getting a new iPhone. For years, you've been able to set up an Apple TV automatically by placing an iOS device near it. Now you can finally set up iOS 11 devices the same way!

So, if you have a new iPhone 8 on the way, for instance, I highly recommend upgrading your existing iPhone to iOS 11 before it arrives. Then, when you set up your new iPhone, you'll save yourself from entering Apple ID credentials, Wi-Fi passwords, and the like. Just follow the onscreen prompts at setup or check out the What's New chapter of "[Take Control of iOS 11](#)" for instructions.

I hope you found these tips and highlights helpful, and check out "[Take Control of iOS 11](#)" for even more iOS advice!

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# Club and Meeting News

## Apple's New Operating Systems

...with Dave Hamilton of The Mac Observer and Mac Geek Gab

**Saturday, September 19**

CenterPoint Energy Community Center

7001 Fifth Street, Bellaire, TX 77401

9 am - 1 pm

	CenterPoint Energy Community Center
9:00 am	<b>Mac 101 and Fundamentals, iOS</b> Jonathan Magnus and Rick Roberts
9:30 am	
10:00 am	
10:30 am	
11:00 am	<b>Apple's New Operating Systems</b> Dave Hamilton
11:30 am	
12:00 pm	
12:30 pm	
1:00 pm	
1:30 pm	
2:00 pm	

### Special Interest Groups

**Mac 101 and Fundamentals with Jonathan Magnus:** The SIG for basic to advanced Mac topics.

**iOS with Rick Roberts:** Discuss all things iPhone, iPad, iPod, iTunes, and iCloud.

**Special Interest Group and Ad Hoc Meetings:** Groups are welcome to use the casual spaces to meet on other topics. Scheduled SIGs take precedence. If you have an idea for a SIG, email the HAAUG SIG Coordinator at [SIG\\_Coordinator@haaug.org](mailto:SIG_Coordinator@haaug.org)!

### Join the HAAUG Board of Directors!

We will soon be asking for members to volunteer to serve on the Board of Directors. Please consider putting your name up for a leadership position. For more information, talk to any board member at a meeting or send an email to [president@haaug.org](mailto:president@haaug.org).

### Meetup Group

The Houston Area Apple Users Group is now on Meetup.com! Click here to visit our group's Meetup page and join. We will of course continue to publish all meeting news on our website at [haaug.org](http://haaug.org), to our Facebook group, and all other outlets as usual; this is simply an additional way to market our organization to the local community. If you are already a HAAUG member and join the Meetup group we will mark your dues as paid on the Meetup website, so you won't have to pay HAAUG dues twice!

### HAAUG Website Updates

If you haven't visited the [HAAUG website](http://haaug.org) recently, stop by and check it out. Learn more about the organization, get up-to-the-minute news and updates, and browse the Apple Barrel archives, dating back to 1996!

### Submit Your Content to Apple Barrel!

Have you tried a new Mac or iOS application? Found a neat accessory for your iPhone? Want to share a cool tip you've come across? Write about it, and send your column to [editor@haaug.org](mailto:editor@haaug.org). You can help make the Apple Barrel a better publication while providing valuable insight and opinion to your fellow HAAUG members.





by Phil Booth, 2017 HAAUG President

## Editor's Note

The observant among the readership will note that there was no Apple Barrel for September; sorry about that. While I was lucky enough to be unaffected by Hurricane Harvey at my home, the storm has had a significant effect on my work schedule during the past several weeks, and I was not able to get the September issue published timely.

I thank everyone for their patience. Future issues of the Apple Barrel should be back to the usual schedule. As a reminder we always welcome reader submissions, which you can send by email to <editor@haaug.org>. If you have a product to review or a story to tell, please send it in so the membership can benefit! The Apple Barrel's official "print date" (when it is delivered by email to the membership) is the second Saturday of the month (one week prior to the general meeting). Thanks, and all the best!

**Ryan Eisworth**  
Media & Communications Administrator

## September 2017

It has been a rough week for Houston. I was smart as I did a clone backup of my hard drive Thursday prior to the arrival of Harvey. I was very lucky as my prep for the storm consisted of getting some batteries to fit a flashlight that I use. I almost purchased a gas grill but decided against the purchase.

They let us go at noon Friday at the University of Houston. I came home and decided to do laundry Friday afternoon and I was glad that I did. The rains came and this was the first time that I had water in my house. It was very odd I was in the kitchen one moment and the next I had water in the kitchen and my den. My luck continued as later Saturday the water receded and I was ninety percent dry by Sunday.

I have been touring the Bellaire area and there are many more homes that had more water. There was carpet pulled out of houses and this time there was hardwood-flooring slats stacked out at the curb. Houses east of the loop were the ones that took the most water. The house across the street from me took a lot of water because the owner pulled the carpet and the hardwood out of the house.

We could not escape the flood coverage on the radio or TV so we know that there are many Houstonians in shelters or living on the second floor of their house. Scenes of boat and helicopter rescues were shown through out the weekend. What was also shown was the compassion of Houstonians who will jump in to help.

As I have stressed in this column from time to time having a backup of your data is very important, not because your hard drive will fail but because you might be separated from your machine. I know I could have had as much water as my neighbors and I would be looking for alternative living arrangements. Hug your loved ones and backup your data.

On September 12 Apple will reveal the next version of the iPhone. The event will be in the new Steve Jobs Theater on the new Apple Campus. Since you will be reading this after the event, I will reserve judgment on the new models. I will not even comment on the rumors about the features of the new phones. All I know is that there will be new phones after the twelfth.

Thanks to ArsTechnica's Lee Hutchinson for a very interesting presentation on what you give away when you use the Internet. He started his talk by recommending living in a cave and disconnecting from the world. In reality we can't; the utility of the online world is so alluring. I depend on online banking; I write about ten checks a year now. I am on Facebook again the utility of keeping up with friends has to be balanced against the loss of some privacy. Lee's talk did make me think about pulling in and not letting it all hang out online.

As we turn the corner and start the fall we are looking for people to help with the club. If you would like to volunteer see one of the board members and we will find you something to do. If you live in the Bellaire area and can spend a Friday early evening before the meeting we could use the help setting up the room. If you can assist please see me.

September will be photography month with old friend Regan Atkinson bringing us up to date with what's new in photography. Bring your photo questions to the September 16th meeting.

# Apple Introduces iPhone 8, iPhone 8 Plus, and iPhone X

by Josh Centers, TidBITS

At Apple's special event on 12 September 2017, the company threw back the curtain on the latest iPhone models, the iPhone 8 and iPhone 8 Plus, which are logically next in line after last year's iPhone 7 and iPhone 7 Plus, and the ground-breaking iPhone X. (That's the same Roman numeral X as Apple used in Mac OS X, so it's pronounced "iPhone 10.")

iPhone 8 and 8 Plus -- Breaking with tradition, Apple jumped directly from the iPhone 7 to the iPhone 8, bypassing the expected iPhone 7s. That makes sense because the iPhone 8 boasts a new industrial design and a few major new hardware features — it's more than an enhanced iPhone 7.

Apple has returned to a mostly glass case, claiming that it's the most durable glass ever used in a smartphone. We won't be putting that to the test, but the reason for the glass is that the iPhone 8 supports the Qi wireless charging standard (pronounced "chee"). Charging pads are available, and furniture retailer IKEA has even introduced tables with integrated wireless chargers. Apple said that next year it would release an AirPower charging mat that could charge an iPhone 8 or iPhone X, Apple Watch Series 3, and a set of AirPods with an optional new charging case. Lightning ports remain standard in the iPhone 8 so you can still plug in to charge.

The iPhone 8 and 8 Plus have reinforced steel innards and are sealed to provide water and dust resistance. The water resistance is IP67, the same as the iPhone 7. The physical sizes are nearly the same as the iPhone 7 and 7 Plus as well, varying only by 0.1 or 0.2 millimeters in various dimensions. Between the glass and the steel, however, the new models are slightly heavier, weighing in at 5.22 ounces (148 grams) and 7.13 ounces (202 grams), which are 10 and 14 grams heavier, respectively.

The screens on both the 4.7-inch iPhone 8 and 5.5-inch iPhone 8 Plus sport the same basic technical specs as the previous models as well. However, the new iPhone displays now support Apple's True Tone technology, which changes the brightness and color of the display based on the ambient light. Apple claims that the new iPhones' speakers are 25 percent louder than the iPhone 7 and boast deeper bass.

Much has been made of ARKit, Apple's augmented reality technology in iOS 11 ("ARKit: Augmented Reality for More Than Gaming," 28 July 2017). To provide the best possible experience for AR and other processor-hungry tasks, Apple has given the new iPhones a new chip, the A11 Bionic, with a neural engine. It also has an updated M11 motion coprocessor. Apple claims that the A11 Bionic is the most powerful chip ever in a smartphone, with a six-core CPU that can deliver up to 70 percent better performance than the A10. The iPhone 8 also includes Apple's first-ever in-house GPU, which is 30 percent faster than the previous GPU and can deliver iPhone-7-level performance at half the power. There's also a new image signal processor that provides faster autofocus in low light and better pixel processing, plus hardware-enabled noise reduction.

For better photos, video, and augmented reality, Apple also

improved the cameras in the iPhone 8 and 8 Plus. The rear-facing camera in the iPhone 8 is still 12 megapixels, but it sports a new sensor that features deeper pixels, a new color filter, and optical image stabilization. It captures 83 percent more light and is more power efficient too. All that adds up to better color saturation, a wider dynamic range, and lower noise than the previous models. As we've noted previously, the camera captures photos in HEIF and JPEG (see "HEVC and HEIF Will Make Video and Photos More Efficient," 30 June 2017).

In the iPhone 8 Plus, there are once again dual cameras, both at 12 megapixels. One has an f/1.8 aperture, and the other is f/2.8. Again, those are the same basic numbers as the iPhone 7 Plus, but with the new sensors. Portrait mode sticks around and has received some enhancements, but new (and in beta) is Portrait Lighting, which lets you change the lighting of your shot in real-time as you compose the shot. You can even tweak the lighting afterward. These features show that computational photography is where the photography world is going.

Video capture on the iPhone 8 and 8 Plus is also notably improved thanks to an Apple-designed video encoder. You can now shoot 4K video at 24, 30, or 60 frames per second, whereas the iPhone 7 could do only 24 fps. Slo-mo video supports 1080p resolution at 120 fps or 240 fps, again besting the iPhone 7, which could only provide 120 fps. Video is captured using HEVC and H.264.

In terms of other specs, the iPhone 8 is basically the same as the iPhone 7, with the exception of Bluetooth 5.0 instead of 4.2. Apple's tech specs page also notes that the iPhone 8 supports "NFC with reader mode" whereas the iPhone 7's page just said "NFC." We don't yet know if there's a technical difference behind the wording change.

Both the iPhone 8 and 8 Plus are available in two capacities — 64 GB and 256 GB — and in three colors — gold, silver, and space gray. The 64 GB models of the iPhone 8 cost \$699, and the 256 GB models cost \$849. The iPhone 8 Plus models are \$100 more, either \$799 for 64 GB or \$949 for 256 GB.

Both come with Lightning-based EarPods, a Lightning to USB cable, a 5 watt USB power adapter, and — still! — a Lightning to 3.5 mm headphone jack adapter if you want to use standard headphones. And, of course, they'll run iOS 11.

They're available for pre-orders now and will ship on 22 September 2017. You won't have to wait that long for iOS 11, though, which will become available on 19 September 2017.

iPhone X -- After the announcement of the iPhone 8, Tim Cook returned to the stage for Apple's classic One More Thing™ — the much-rumored iPhone X.

Although it shares a few industrial design features with the iPhone 8, such as the glass back that enables Qi wireless charging, the iPhone X boasts an edge-to-edge screen that fills almost the

entire front face, dropping the iconic Home button entirely. Its metal edges are surgical-grade stainless steel, and it comes in just two colors: silver and space gray.

The iPhone X screen measures 5.8 inches diagonal, which means that it offers more screen real estate than the 5.5-inch iPhone 8 Plus screen, but by losing the bezel, the iPhone X is much closer in size to the iPhone 8 (thank goodness!). The iPhone 8 is 5.45 inches by 2.65 inches by 0.29 inches (138.4 x 67.3 x 7.3 mm) and weighs 5.22 ounces (148 g). But the iPhone X is just 5.65 inches by 2.79 inches by 0.30 inches (143.6 x 70.9 x 7.7 mm) and weighs 6.14 ounces (174 g). The extra size must have given Apple more room for the battery, since it's supposed to last 2 hours longer than the iPhone 7 (and the iPhone 8 has the same battery life as the iPhone 7).

The iPhone X's Super Retina display also has way more pixels — 2436-by-1125 at 458 pixels per inch — than any previous iPhone. In comparison, the iPhone 8 Plus is only 1920-by-1080 at 401 ppi. That means you'll see quite a bit more detail on the iPhone X than you would on even Apple's previous Plus models.

Some of these changes were made possible via the switch to OLED — organic light-emitting diode — technology. Historically, OLED screens have provided great contrast, high resolution, and minimal thickness due to not needing a backlight, but they have had trouble with brightness, wide color support, and color accuracy. Apple claims to have resolved these problems, so the iPhone X display supports high dynamic range video in both the Dolby Vision and HDR10 formats and offers a 1,000,000 to 1 contrast ratio. It also supports 3D Touch and True Tone.

But without a Home button, how do you wake an iPhone X? Raise to Wake still works, or you can just tap the screen. What about Siri? Press the iPhone X's new side button, much like on an Apple Watch, or just use "Hey, Siri." To unlock the iPhone X, you just swipe up from the bottom of the screen while looking at the iPhone X, and it uses Apple's new Face ID technology to recognize your face, much like Touch ID did with your fingerprint in the past. Apple said nothing about whether the iPhone X could learn multiple faces as previous iPhones could learn multiple fingers, but entering a passcode remains an option for families who often share devices.

Face ID relies on both the A11 Bionic's neural engine and what Apple calls the TrueDepth front-facing camera system — that notch on the top of the iPhone X — which includes a 7-megapixel camera, infrared camera, flood illuminator, and dot projector, along with the proximity sensor, ambient light sensor, speaker, and microphone. Face ID works in the dark, and although you train it quickly on initial setup, it continually adapts to your changing look, so it can handle glasses, hats, beards, and more, all without being fooled by photos.

It almost seemed as though Apple had read Rich Mogull's "Preparing for a Possible Apple "Face ID" Technology" (18 August 2017) because the company noted that Touch ID has a 1 in 50,000

false positive rate, but Face ID should be more like 1 in 1,000,000. That said, Apple did admit that Face ID might not stop evil twins (whereas Touch ID would, since identical twins do not have identical fingerprints). Also, apps that work with Touch ID, like 1Password, will work with Face ID.

Swiping up from the bottom of the iPhone X screen works across the system for jumping back to the Home screen or (if you pause briefly) opening the app switcher. You can also swipe left and right on the bottom area to switch between apps. The main oddity is that you now get to Control Center by swiping down from the top-right corner of the screen (to the right of the notch). To access the Lock screen, which replaces the Notification Center in iOS 11, you now swipe down on the upper-left of the screen (to the left of the notch).

Apple uses the iPhone X's facial recognition technology in a few other ways, including a demo of an upcoming version of Snapchat that could affix a virtual mask to your face in real time. And you can create "animoji" — a dozen different animated emoji characters whose faces mimic what you do with your face while recording in Messages. Technically impressive, but it brings new meaning to that long-ago option in Eudora: "Waste cycles drawing trendy 3D junk."

The iPhone X sports a pair of cameras, much like the iPhone 8 Plus, but has slightly different specs. One has an f/1.8 aperture, but the other is f/2.4, as opposed to f/2.8 on the iPhone 8 Plus, and lets in 36 percent more light. It also sports optical stabilization (on both lenses) for better low-light photos and videos. Apple says its quad-LED True Tone flash delivers twice the uniformity of light.

As with the iPhone 8, the iPhone X will be available in two capacities — 64 GB for \$999 and 256 GB for \$1149. Interestingly, unlike the iPhone 8, you cannot buy a SIM-free iPhone X that can work with any carrier; you must select from AT&T, Sprint, T-Mobile, or Verizon when ordering from Apple. Besides cases, the iPhone X accessories are the same as the iPhone 8, including the headphone adapter. You can pre-order an iPhone X on 27 October 2017 with availability on 3 November 2017.

If you're in the market for a new iPhone, the question is, do you wait another 6 weeks and pay an extra \$300 for the bigger display, Face ID, and other improvements? It's tempting, of course, but since a lot of new technology debuts in the iPhone X, it's also possible that it will be plagued with problems, particularly at first. Apple has historically done a pretty good job of addressing problems that seem like hardware issues with iOS updates, but you could still suffer through a month or two of awkward usage if Face ID doesn't work well for you, for instance.

All that said, I'm getting one.

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This is where the excitement begins. On the third Saturday of each month, members of HAAUG meet for a day filled with activities, including presentations by major software and hardware vendors, special interest group (SIG) meetings, raffles, and much, much more. Swap Meets are held twice each year, in January and July.

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The HAAUG Mentor Program puts people with hardware, software, system or network problems in contact with volunteers who can provide solutions. Contact with the mentors can be made through the HAAUG Hotline, e-mail, or at the monthly meetings.

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