

The iPhone Out of the Box

iOS 9 Basics

Presented by George Wilde

April 27, 2016

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iPhone - The Music Video

I WANT AN IPHONE
(To the tune of "I Did It My Way")
New lyrics by David Pogue:

And now, the end is near,
I'm sick to death of this old cellphone.
Bad sound, the signal's weak, the software stinks—
A "Made in Hell" phone!
I've heard there's something new,
A million times more rad than my phone,
I too, will join the cult,
I want an iPhone.
Concerns, I have a few;
It's got some flaws, we may just face it,
No keys, no memory card,
The battery's sealed—you can't replace it.
But God, this thing is sweet,
A multitouch iPod Wi-Fi phone,
You had me from "hello,"
I want an iPhone.

I want to touch that precious screen,
I want to rub the smudges clean,
I want my friends to look and drool,
I want to say, "Look, now I'm cool!"
I stood in line, and I'll get mine:
I'll get an iPhone!
For what is a man, what has he got?
With no iPhone, then he's got squat.
It's all the things a phone could be—
So what if it's AT&T?
I took a stand, paid half a grand...
And got an iPhone!

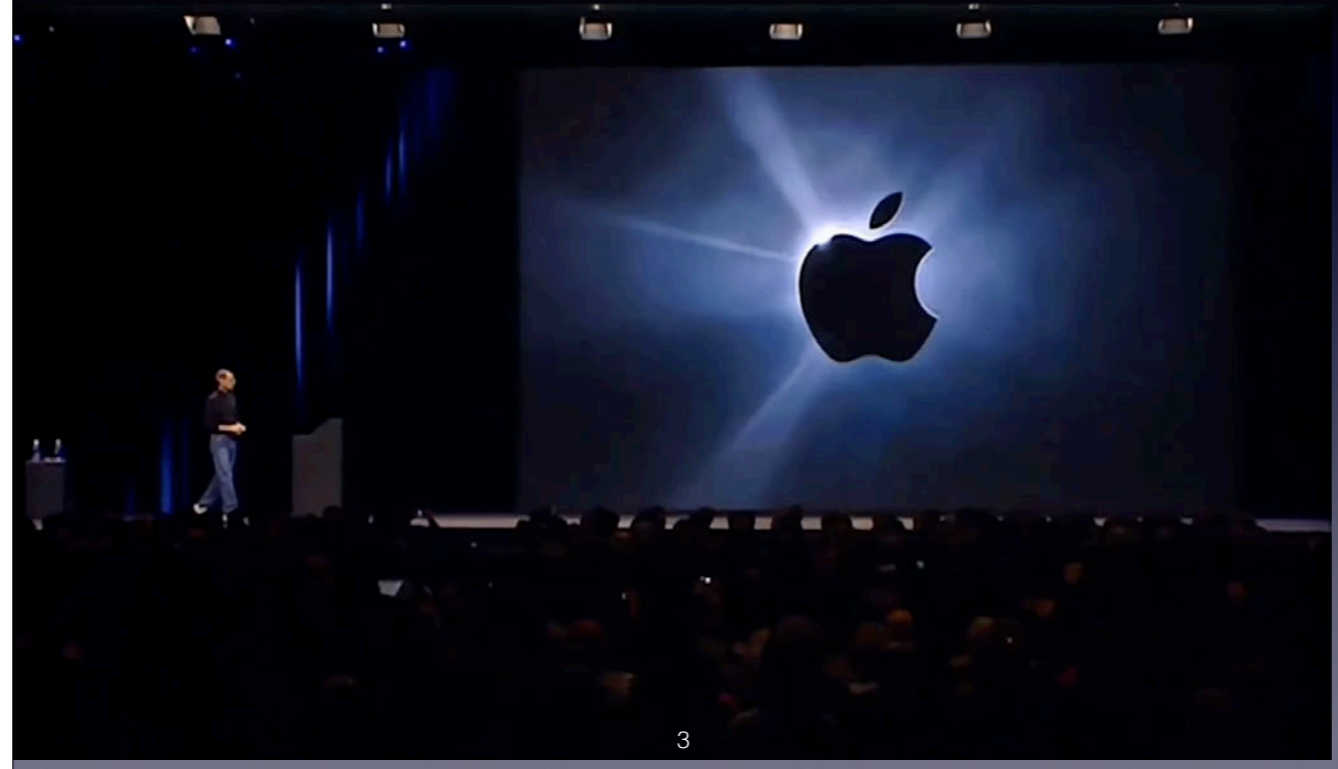
David Pogue - July 5, 2007

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David Pogue's "I Want an iPhone" video can be viewed at the following URL:

<https://www.youtube.com/watch?v=vniMR6Ez9cE>

MacWorld - Jan. 9th 2007



The presentation included a brief clip from the Steve Jobs 2007 Macworld Keynote in San Francisco where he introduced the original iPhone. The complete Keynote video can be viewed at the following URL:

https://www.youtube.com/watch?v=P-a_R6ewrmM

First Generation iPhone



January 9, 2007



June 29, 2007

iPhones were only shown behind a glass cylinder at Apple's 2007 MacWorld Exhibition Booth, and were not available to touch or try out. Only recently was it revealed that when Steve Jobs demonstrated the many features of the iPhone he had to use several different iPhones because no single iPhone could reliably demonstrate all of its features at that time.

Nearly six months later the original iPhone was released.

iPhone SE, 6s & 6s Plus



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The latest iPhones are the iPhone SE, iPhone 6s and iPhone 6s Plus with 4", 4.7", and 5.5" screens respectively.

Packaging is in a beautifully and precisely manufactured box with Siamese fighting fish on the top.

In the box is the iPhone (without a case), Apple EarPods with Remote and Mic, Lightning to USB Cable, USB Power Adapter, Decal, Warranty Card, and Instruction Card.

The presentation covers iOS 9 which is currently installed on nearly 85% of all active iOS devices. Specifically, I will be talking about the latest release - iOS 9.3.

iPhone Comparison

| | Original iPhone | iPhone 6s Plus |
|---------------------|-----------------------|---|
| Cellular Technology | GSM Only | GSM, CDMA, HSPA, EVDO, LTE |
| Cellular Bands | 4 - 2G Bands | 23 - 4G LTE Bands + 2G & 3G Bands |
| Carriers | AT&T | 31 in US + 223 More Worldwide |
| Processor | 412 MHz CPU + MBX GPU | 1.84 GHz 2-Core CPU + GT7600 6-Core GPU |

A single iPhone 6s has more computer power than all of NASA's computers back in 1969 when it placed two astronauts on the moon

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The original iPhone only supported AT&T in the US - The latest iPhones support 31 US carriers and 223 more worldwide.

A single iPhone 6s has more computer power than all of NASA's computers back in 1969 when it placed two astronauts on the moon. Not just the Apollo Guidance Computer, but all of the Mission Control and Tracking Computers. Multiple IBM System/360 Model 75 mainframe computers, costing up to \$3.5 million apiece all the while occupying tremendous amounts of space, were operational at NASA at the time. Each could perform several hundred thousand addition operations per second, and their total memory capacity was in the megabyte range. As for the 70-pound Apollo Guidance Computer, which the Apollo 11 Command Module had on board, it was a machine that had 64 kilobytes of memory and operated at 0.043MHz.

In 1975, a supercomputer named Cray-1 came around. It was a capable and awesome-looking piece of machinery that operated at a rate of only 80MHz. While generally used for scientific projects, one of these supercomputers helped render the computer graphics for the first Tron movie, released in 1982. But a Cray-1's raw computational power of 80 million floating-point operations per second (FLOPS) is laughable by today's standards; the graphics unit inside the iPhone 6s produces over 100 GFLOPS (100 billion floating-point operations per second) – more than a thousand times more.

Deciphering the alphabet soup:

- Second, third, and fourth generation Cellular Technology is labeled 2G, 3G, and 4G.
- GSM (Global System for Mobile Communications) is a standard developed by the European Telecommunications Standards Institute (ETSI) to describe the protocols for second-generation (2G) digital cellular networks used by mobile phones, first deployed in 1991. As of 2014 it has become the default global standard for mobile communications - with over 90% market share, operating in over 219 countries and territories. GSM is used by AT&T and T-Mobile.
- CDMA (Code Division Multiple Access) is a channel access method used by various radio communication technologies. CDMA is an example of multiple access, where several transmitters can send information simultaneously over a single communication channel. This allows several users to share a band of frequencies. To permit this without undue interference between the users, CDMA employs spread-spectrum technology and a special coding scheme where each transmitter is assigned a code. CDMA is used by Verizon and Sprint as well as a few other cellular carriers.
- GSM is used by AT&T and T-Mobile; CDMA is used by Verizon and Sprint.
- HSPA (High Speed Packet Access) is an amalgamation of two mobile protocols that extends and improves the performance of existing 3G mobile telecommunication networks.
- EVDO (Evolution-Data Optimized) is a telecommunications standard for the wireless transmission of data through radio signals, typically for broadband Internet access, that supports high data rates and can be deployed alongside a wireless carrier's voice services.
- LTE (Long-Term Evolution, commonly marketed as 4G LTE) is a standard for wireless communication of high-speed data for mobile phones and data terminals. Only the AT&T model of the iPhone 6s and 6s Plus has Band 30 LTE, otherwise the two US models of the iPhone 6s and 6s Plus are essentially identical.

iPhone Comparison (Con't)

| | Original iPhone | iPhone 6s Plus |
|-----------------|------------------------------------|---|
| Memory | 4/8/16 GB 128 MB RAM | 16/64/128 GB 2 GB RAM |
| Camera | 2 MP Single Camera No Video | 12 MP/5MP Cameras Up to 4K Video |
| COMM Capability | 802.11 b/g Wi-Fi v2.0 Bluetooth | 802.11 a/b/g/n/ac Wi-Fi (Dual Band) v4.2 Bluetooth, GPS, NFC |
| Sensors | Accelerometer, Proximity | Fingerprint, Accelerometer, Gyro, Proximity, Compass, Barometer |

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An iSight Camera is on back of the iPhone with True Tone Flash and a FaceTime Camera is on front with screen illumination.

HD Video is 1920 x 1080 pixels, UHD Video (4K Video) is 3840 x 2160 pixels. The iPhone 6s and 6s Plus is capable of editing 4K video.

Deciphering the alphabet soup:

- Wi-Fi is a technology that allows electronic devices to connect to a wireless LAN (WLAN) network, mainly using the 2.4 gigahertz (12 cm) UHF and 5 gigahertz (6 cm) SHF industrial, scientific and medical (ISM) radio bands.
- Bluetooth is a wireless technology standard for exchanging data over short distances (using short-wavelength UHF radio waves in the ISM band from 2.4 to 2.485 GHz[4]) from fixed and mobile devices, and building personal area networks (PANs)
- GPS (Global Positioning System) is a space-based navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.
- NFC (Near Field Communication) is a set of communication protocols that enable two electronic devices, one of which is usually a portable device such as a smartphone, to establish communication by bringing them within 2 in of each other.

iPhone 6s Plus Controls



The iPhone 6s and 6s Plus contains 3 microphones, a telephone receiver, and a speaker, as well as a headset jack and a Lightning connector.

iPhone Buttons & Switches



A Subscriber Identity Module or Subscriber Identification Module (SIM) is an integrated circuit chip that is intended to securely store the international mobile subscriber identity (IMSI) number and its related key, which are used to identify and authenticate subscribers on mobile telephony devices (such as mobile phones and computers).

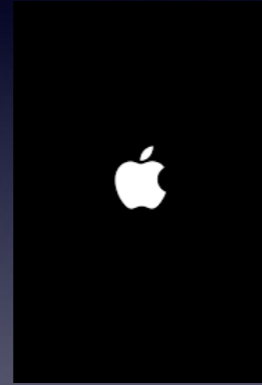
Apple's iPhone Upgrade Program provides you with unlocked iPhones. You can use any carrier's Nano SIM Card with it.

Nano SIM Cards can be purchased for most carriers in most countries at a very reasonable cost, and can be used on any iPhone as long as the iPhone is unlocked.

Multiple Use Buttons

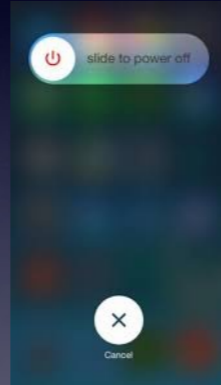
- Press the Volume Up or Volume Down Buttons to take photos or videos
- Briefly press the Sleep/Wake Button plus Home Button to capture the screen image
- Hold down the Sleep/Wake Button plus Home Button until Apple Logo appears to reboot
- Home Button also Recognizes your Fingerprints

Using iPhone Buttons



Reboot

Press and Hold
Sleep/Wake Button
Plus Home Button



Sleep or Power Off

Press
Sleep/Wake Button
(Hold to Power Off)



Wake

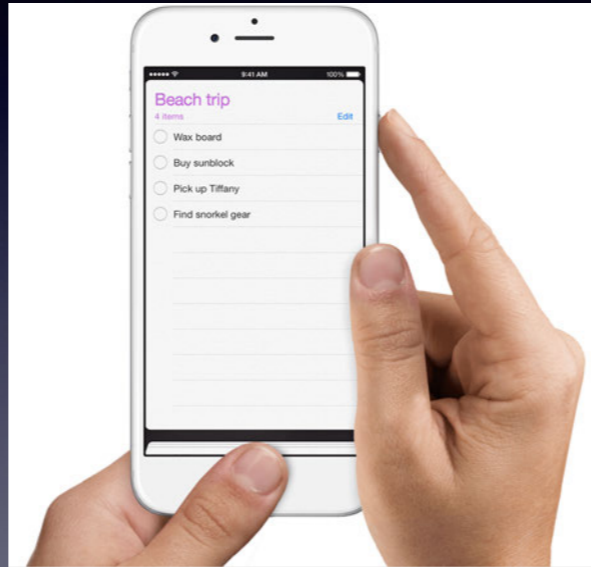
Press
Sleep/Wake Button
or Home Button



Take Photos or Videos

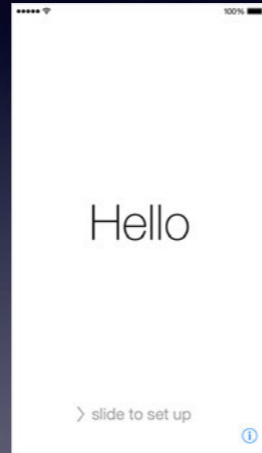
Press Volume Up Button
or Volume Down Button

iPhone Screen Capture



Press Sleep/Wake Button Plus Home Button

Initial iPhone Screens

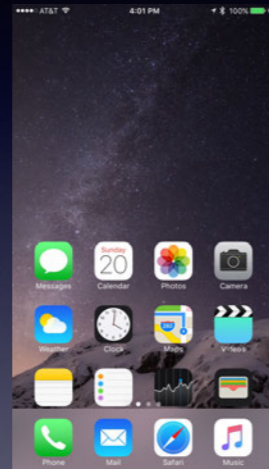


Screen for Initial Setup

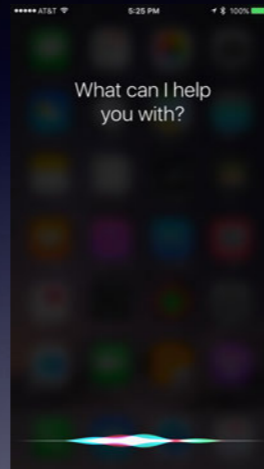


Passcode Screen

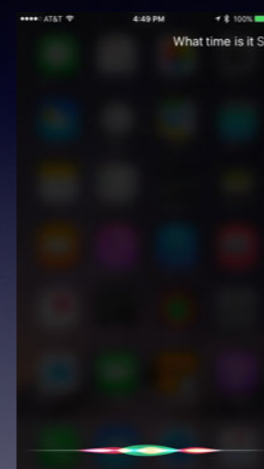
Home Button Functions



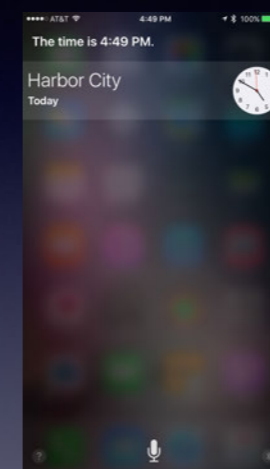
Double-Tap Home Button
on Recent iPhones
to drop down top of screen
for Reachability



Press and Hold
Home Button
to Activate Siri



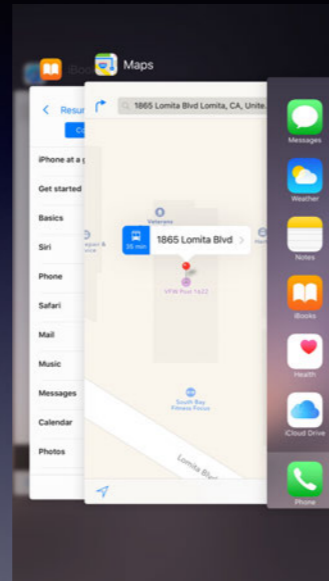
Speak "What
time is it Siri"



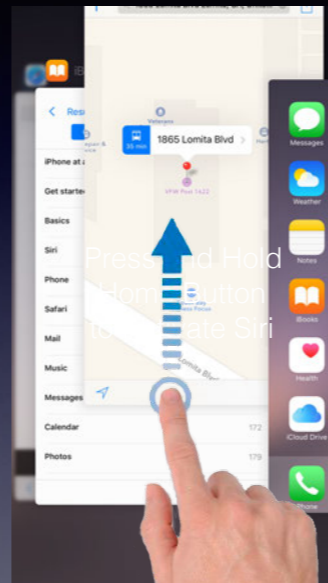
Siri responds with time

Reachability is not implemented on the iPhone SE and other iPhones with a 4" screen.

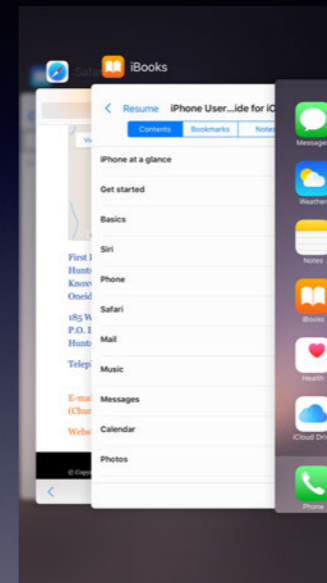
Home Button Functions (Con't)



Double-Click Home Button to Show Open Apps - Tap any App to Bring to Foreground



Drag Up App off Screen Top to Close Any Open App



Map App Now Closed

This is often called the Multitasking View or App Switcher.

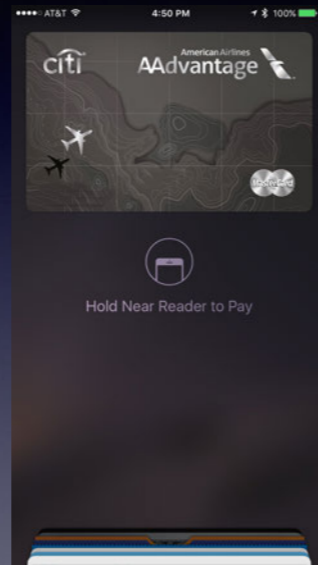
You can also Swipe four fingers up on an iPad or Press the Left Side of the Home Screen with 3D Touch to bring up the App Switcher.

Apps can be:

- Open in Foreground (visible on screen)
- Open in Background (usually visible in Multitasking View - the exception being Background activation from an Apple Watch)
- Closed

Most Apps consume few resources when in Background - the biggest exception being those using Background Navigation Services.

Home Button Functions (Con't)



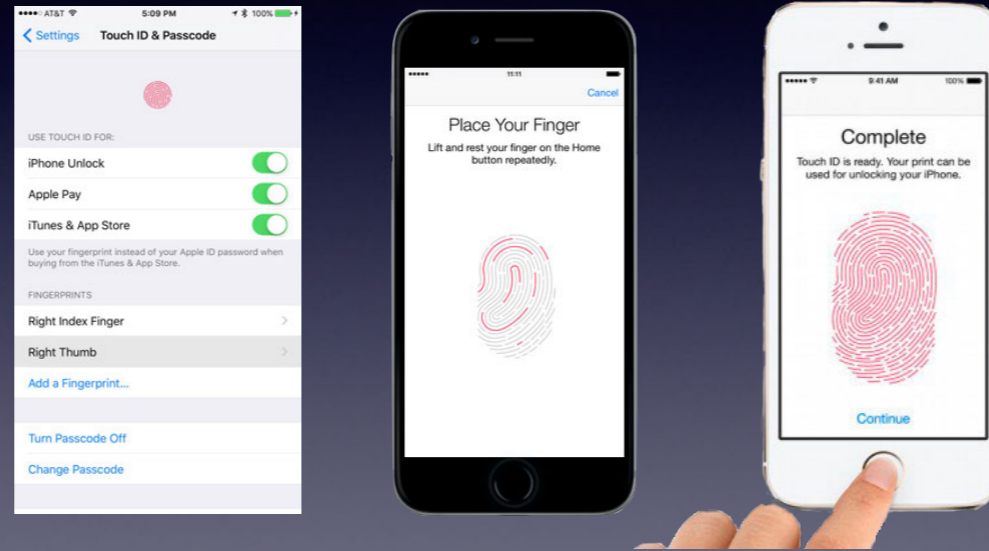
Double-Click Home Button
on Lock Screen for Apple Pay



Tap Bottom of Screen
to Select Alternate Card

Home Button Functions (Con't)

Settings - Touch ID & Passcode



Set Up Touch ID Using Home Button

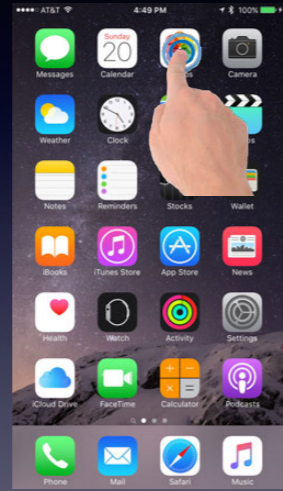
17

Note that I have indicated in Yellow Text where in the Settings App the specific settings mentioned can be selected.

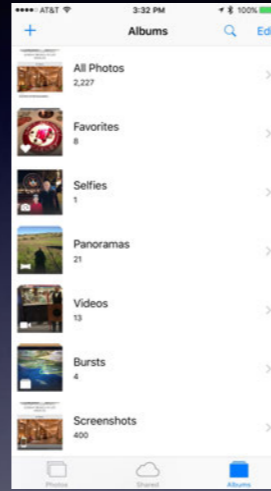
Up to 5 fingerprints can be set up (can be more than one person).

Requires multiple placement of finger on Home Button to register a fingerprint properly.

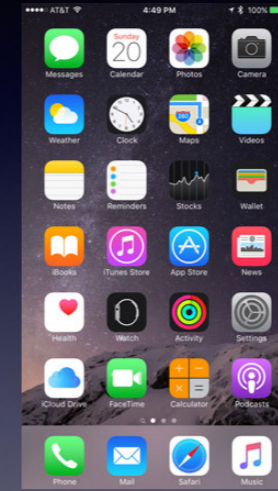
Opening Applications



Tap on App Icon
to Open Application

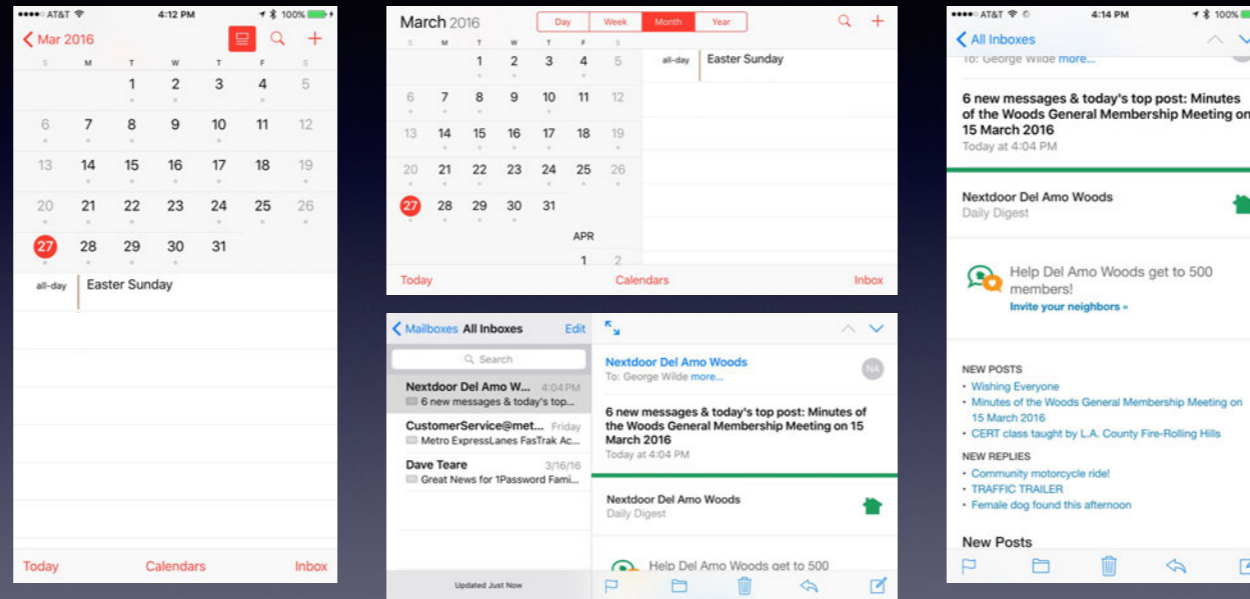


Photos App Opened



Click Home Button
to Return to Home Screen

Portrait & Landscape Differences



Calendar and Mail Portrait and Landscape Views on iPhone 6s Plus

The Mail App has two panes (split-view) on the iPhone 6 Plus and 6s Plus so you can see a list of all emails and the contents of the selected email. To see the dual mail pane (split-screen) you have to have your phone's Display Zoom setting set to Standard instead of Zoomed (Settings - Display & Brightness - View). When set to Standard View the split-screen should appear in Mail, Messages, Notes, and some other Apps when viewed in Landscape Mode. The Zoomed view makes the text larger but prevents the split-screen in all Apps.

Apple's Standard iOS Gestures

- Tap
- Drag
- Flick
- Swipe
- Double-Tap
- Pinch
- Rotate
- Touch and Hold
- Shake

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Tap to press or select a control or item.

Drag to scroll or pan—that is, move side to side.
To drag an element.

Flick to scroll or pan quickly.

Swipe with one finger, to return to the previous screen, to reveal the hidden view in a split view controller, or the Delete button in a table-view row. In a peek, swiping up can reveal quick actions (for more information, see 3D Touch).
With four fingers, to switch between apps on iPad.

Double-Tap to zoom in and center a block of content or an image.
To zoom out (if already zoomed in).

Pinch open to zoom in; pinch close to zoom out.

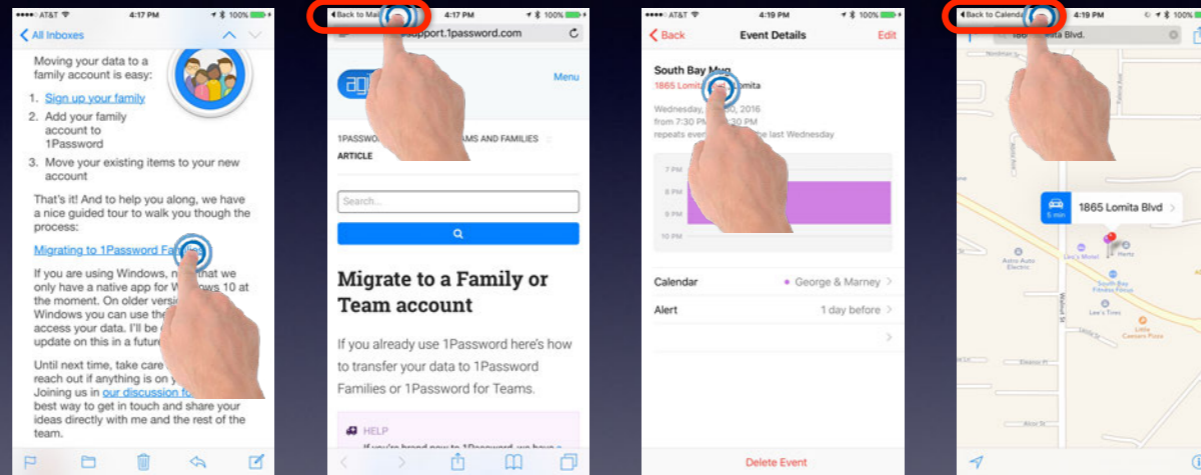
Touch and Hold in editable or selectable text, to display a magnified view for cursor positioning.

Shake to initiate an undo or redo action (similar to the Etch A Sketch drawing toy invented many years ago).

Additional Multitasking Gestures on iPads:

- Use 5 fingers to pinch in to the Home Screen
- Use 4 fingers to Swipe Up to the App Switcher
- Use 4 fingers to Swipe Left or Right between Apps.

Navigating Between Apps



Tap on Link in Mail to go to Linked Page in Safari

Tap on "Return to Mail" in Safari to Return to Mail

Tap on Address in Calendar to go to Map of Address in Maps

Tap on "Return to Calendar" in Maps to Return to Calendar

Note the Return to Previous App in Upper Left Hand Corner of the Screen with iOS 9. You no longer need to Double-Click the Home Button to go to the previous App (the App that called the current App).

iPhone Finger Gestures

Spotlight Search



Swipe Right
for Spotlight Search

Enter Search Term
with Keyboard
or Microphone



Or Swipe Down from
Middle of Screen
for Spotlight Search

Enter Search Term
with Keyboard
or Microphone

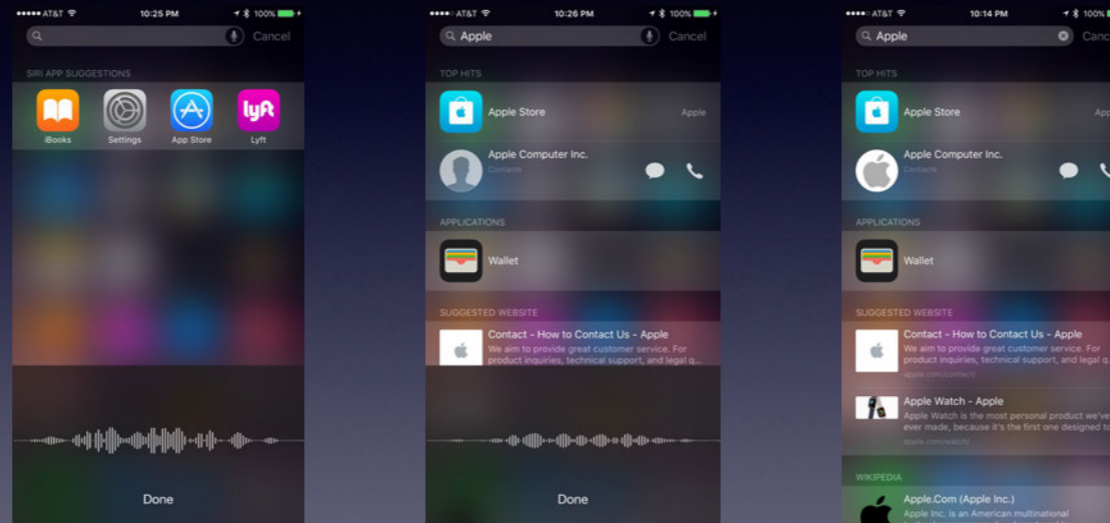


Two ways to enter Spotlight Search - swipe right or swipe down from middle of screen (not top or bottom).

Very useful way to quickly find and open Apps without having to locate them on screens or within folders.

Dictation for Spotlight Search using the Microphone works well. Tap microphone icon.

Spotlight Search Results



Search for "Apple"
Spoken with Microphone

Search Results
for "Apple"

This example uses dictation with the microphone.

App Screens and Folders

- iPhone and iPad screens can contain up to 24 Apps and/or Folders (depending on model) plus 4 (6 on iPad) in dock
- iPhones and iPads can contain multiple screens
- Folder pages can contain up to 9 Apps (16 on iPad)
- Folders can contain multiple pages that you can flip through
- Dots at bottom of page or screen indicate number of pages or screens and current position
- Dock appears on all iPhone and iPad screens

Moving Between Screens & Pages



Swipe Left to Move
to Next Screen

Swipe Right to Return
to Previous Screen

Swipe Left to Move
to Next Page

Swipe Right to Return
to Previous Page

Rearrange Apps



To Move FaceTime - Touch and Hold the FaceTime Icon until Icons Jiggle, then Drag into Position Desired and Click Home Button

To Move Music from the iPhone Dock - Touch and Hold the Music Icon until Icons Jiggle, then Drag into Position Desired and Click Home Button

To Move Photos into the iPhone Dock - Touch and Hold the Photos Icon until Icons Jiggle, then Drag into Position Desired and Click Home Button

Move FaceTime App to top row.

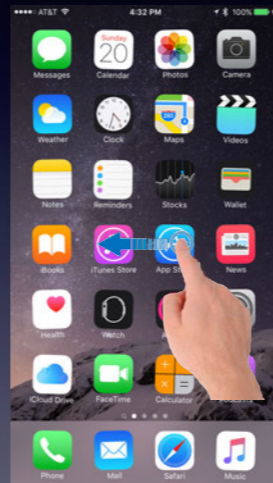
Move Music App from the iPhone Dock to top row.

Move Photos App into the iPhone Dock.

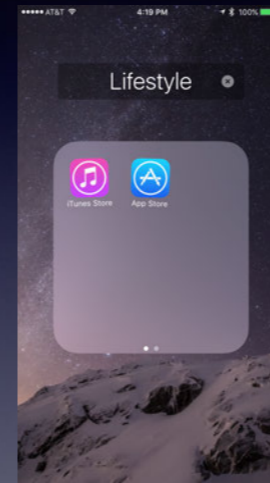
Creating App Folders



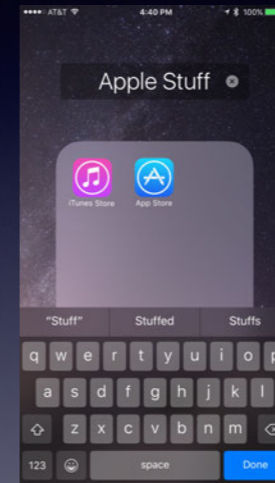
Touch and Hold App Icon until Icons Jiggle



Drag Icon over Other Icon



Folder with Default Name Appears

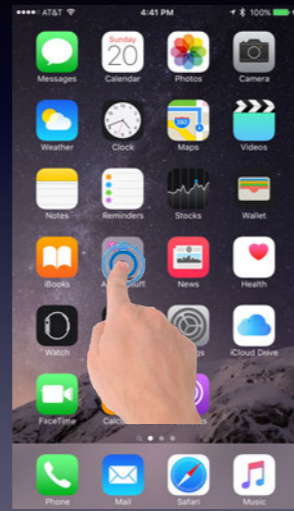


Tap Text to Enter New Folder Name
Click Home Button to Save & Stop Jiggle

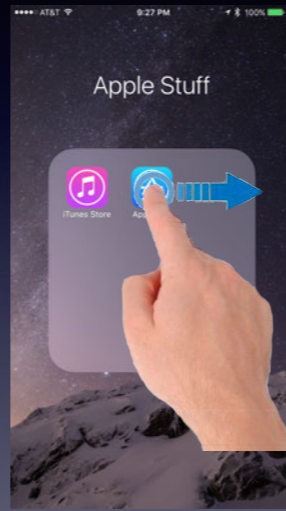
Create Folder containing App Store and iTunes Store by dragging App Store icon over iTunes Store icon.

Rename Folder from default "Lifestyle" to "Apple Stuff"

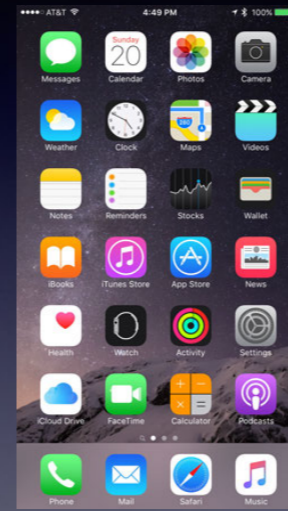
Removing Apps From Folders and iPhone



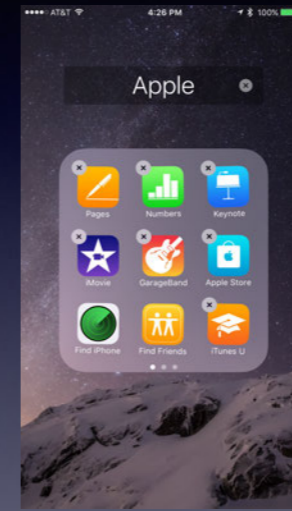
Touch and Hold Folder Icon until Icons Jiggle
Tap to Open Folder



Drag App Icons Out of Folder
Tap Outside of Folder to Close Folder



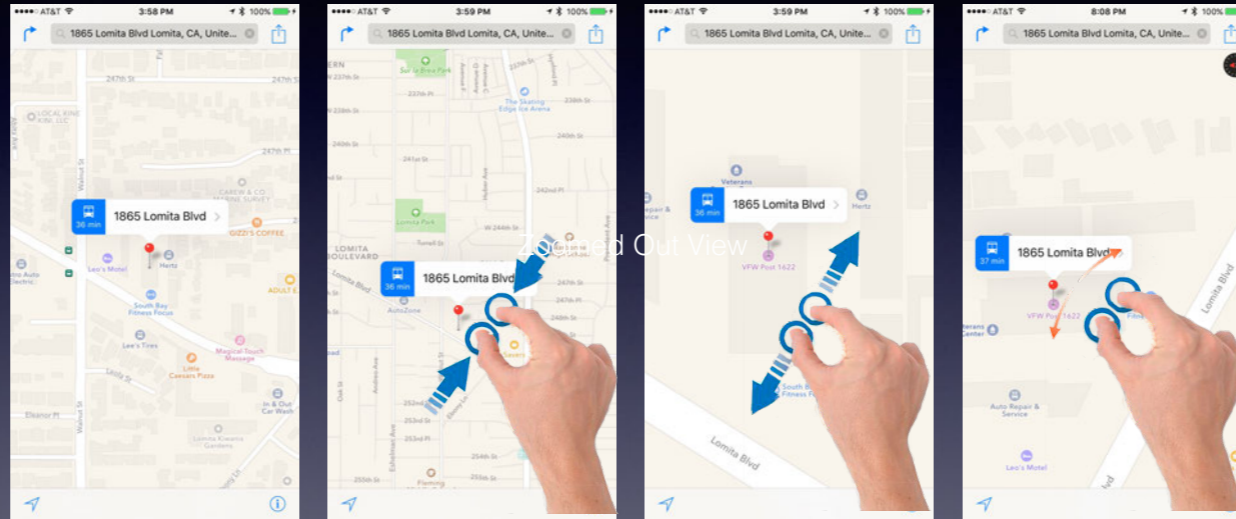
Click Home Button to Save & Stop Jiggle
Folder Disappears when all Apps are Dragged Out



To Remove App from iPhone
Touch and Hold App Icon until Icons Jiggle
Tap x to Delete App

Apple's Core Apps cannot be removed from the iPhone or iPad, and have no x to delete. However you can move any of these Core Apps that you do not want to occupy screen real estate into a separate folder.

Two-Finger Gestures



Normal Map Image

Zoomed Out View

Zoomed In View

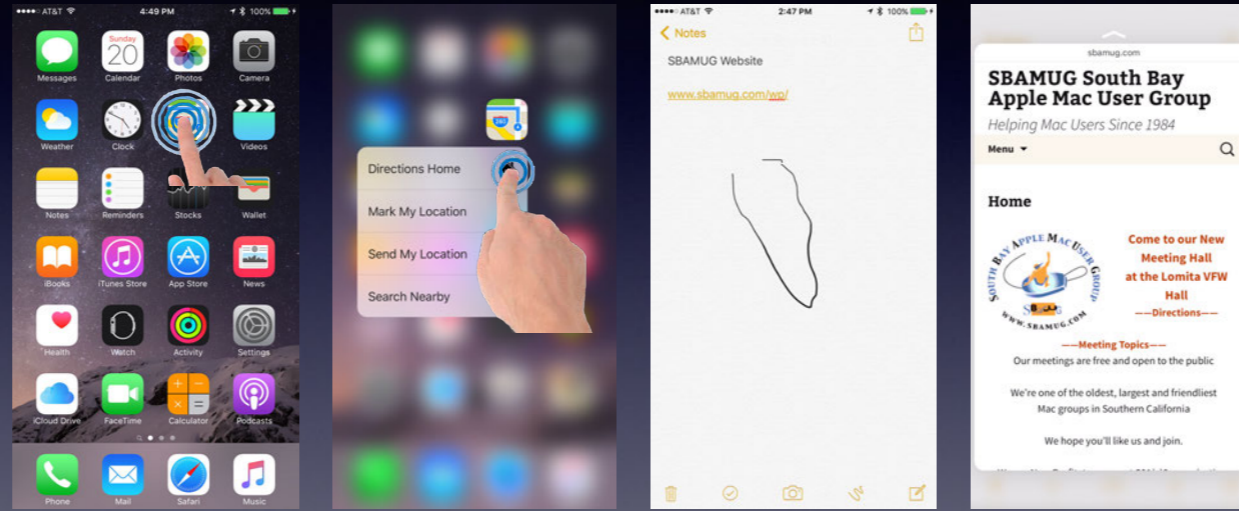
Rotated View

Pinch In to Zoom Out

Pinch Out to Zoom In

Twist to Rotate

3D Touch on iPhone 6s and 6s Plus



To Use 3D Touch on iPhone 6s & 6s Plus
Press Firmly on App Icon

Tap Desired Quick Action to go to Selected Shortcut

Peek or Pop Link to Website
Press Lightly or Firmly for Line Thickness

Resulting Peek to Website

3D Touch only works on the iPhone 6s and 6s Plus

Press on App icon to bring up Quick Actions or Shortcuts. Only works on those Apps that have implemented Quick Actions. (Touch icon lightly to open App, but press icon to bring up Quick Actions).

Press lightly to Peek at linked email, website page, photo, or map. Stop Pressing to return.

Press more deeply to Pop into the email, website page, photo, or map.

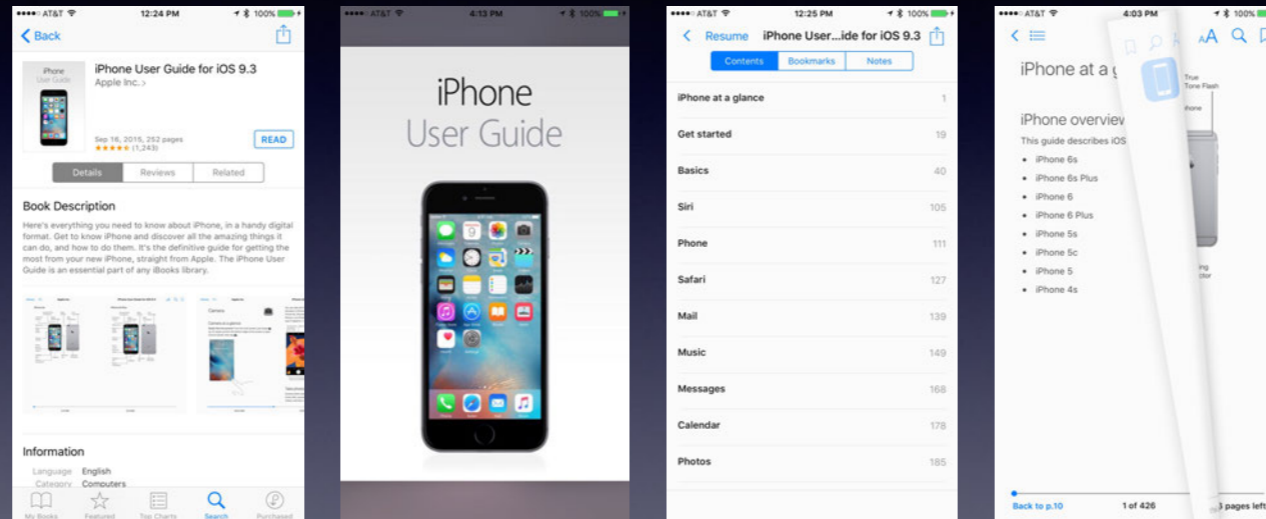
Press the keyboard within Apps and your keyboard behaves like a trackpad.

Press left side of Home Screen to switch to multitasking view.

Swipe to desired App then tap to open.

Draw with Pressure Sensitivity in Notes.

Where is the iPhone User Guide?



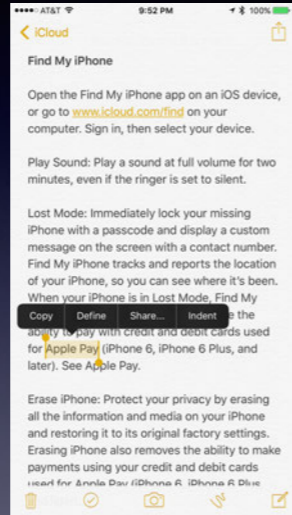
Available Free in Apple iBooks Store Immediately after Software Release - Just Download it into iBooks to Read

31

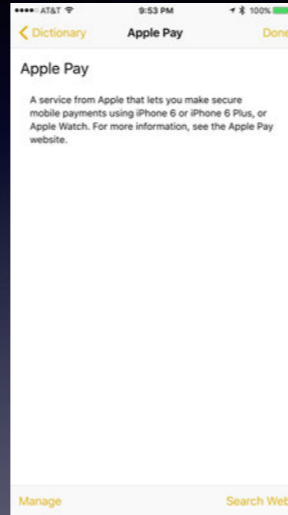
iPhone User Guide is 442 Pages for iOS 9.3.

User Guides are also available for the iPad, iPod Touch, Apple Watch, Apple TV, and iMac - They are always current and are available immediately after new hardware or OS releases.

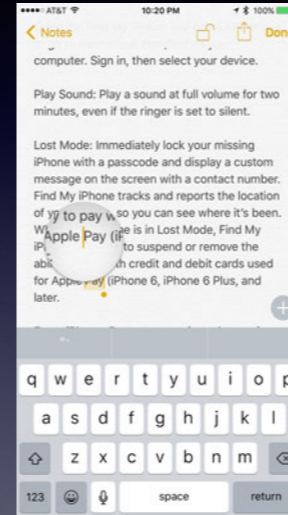
Copy & Paste Text



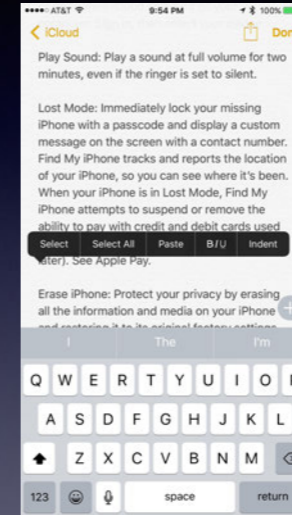
Touch and Hold to
Select Text,
Drag Handles to Expand
or Contract Selection



Tap Define to get
Dictionary Definition,
Tap Copy to Copy



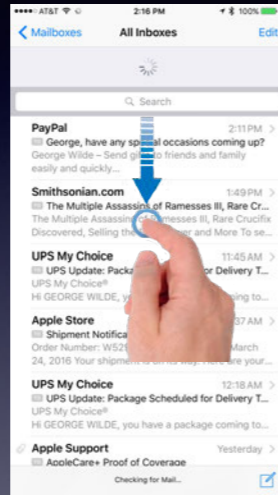
Tap to Select Keyboard
Touch and Hold to
Reveal Magnifying Glass
Move Finger to Select
Cursor Position



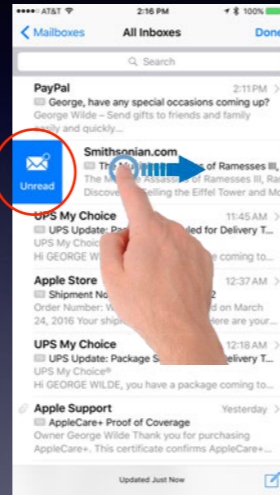
Release Finger then
Tap Paste to Paste
Selected Text at
Cursor Position

Finger Gestures in Apps

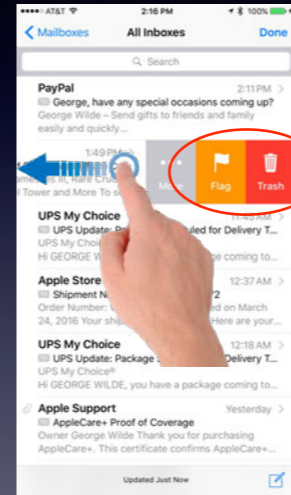
Mail App



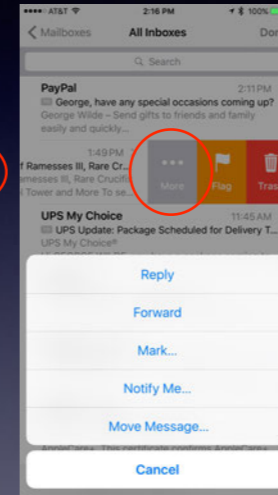
Swipe Down to Refresh Mail



Swipe Right to Unread Message



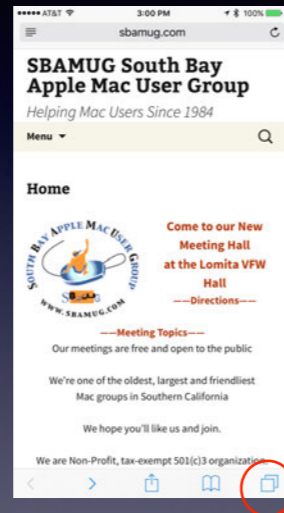
Swipe Left to Flag or Trash Message



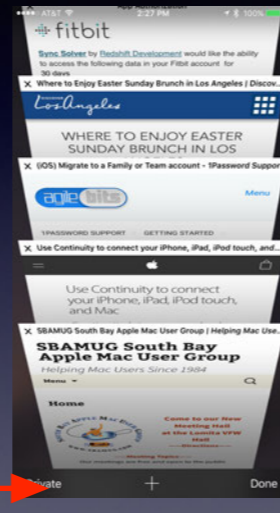
Tap More For More Actions

Finger Gestures in Apps

Safari App



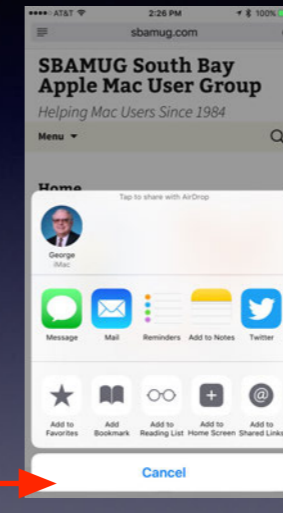
SBAMUG Website



Tap Tabs Icon to View Open Tabs

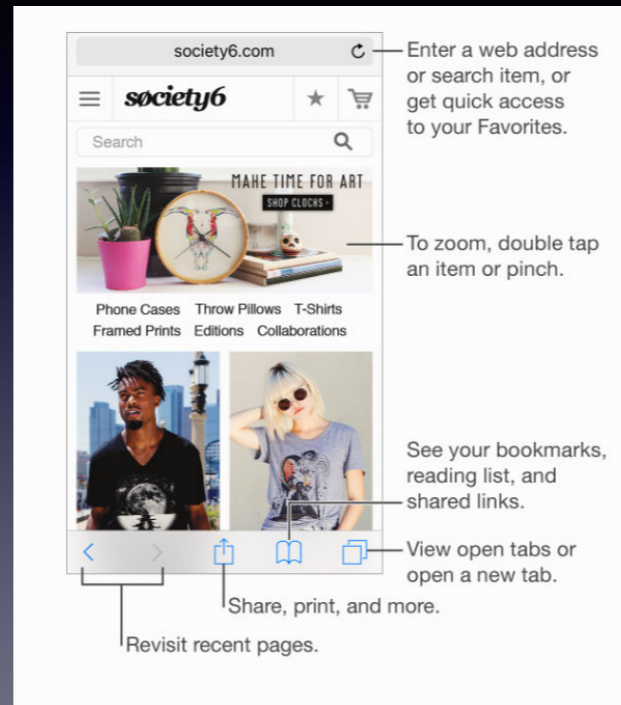


Tap Reader Icon to View Page in Reader

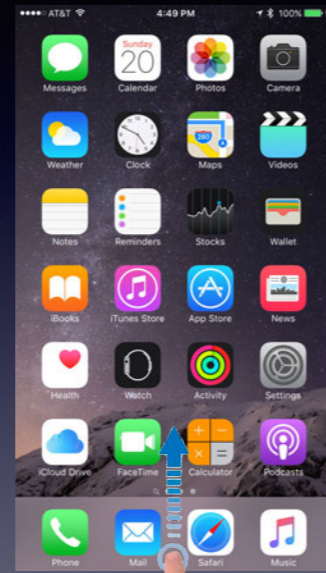


Tap Share Sheet Icon to Share Web Page

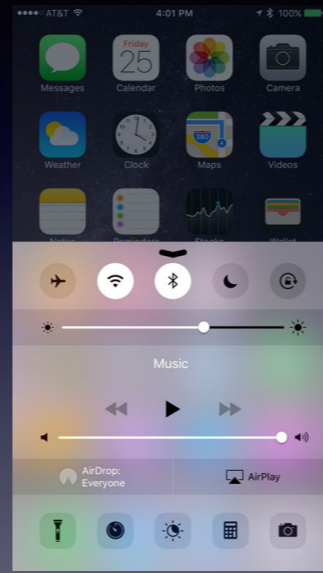
Safari Controls



Control Center

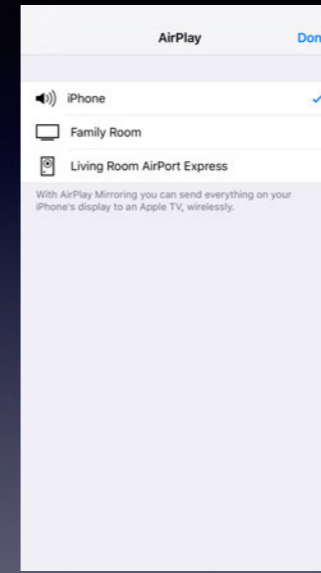


Swipe Up from
Bottom of Screen to
Reveal Control Center



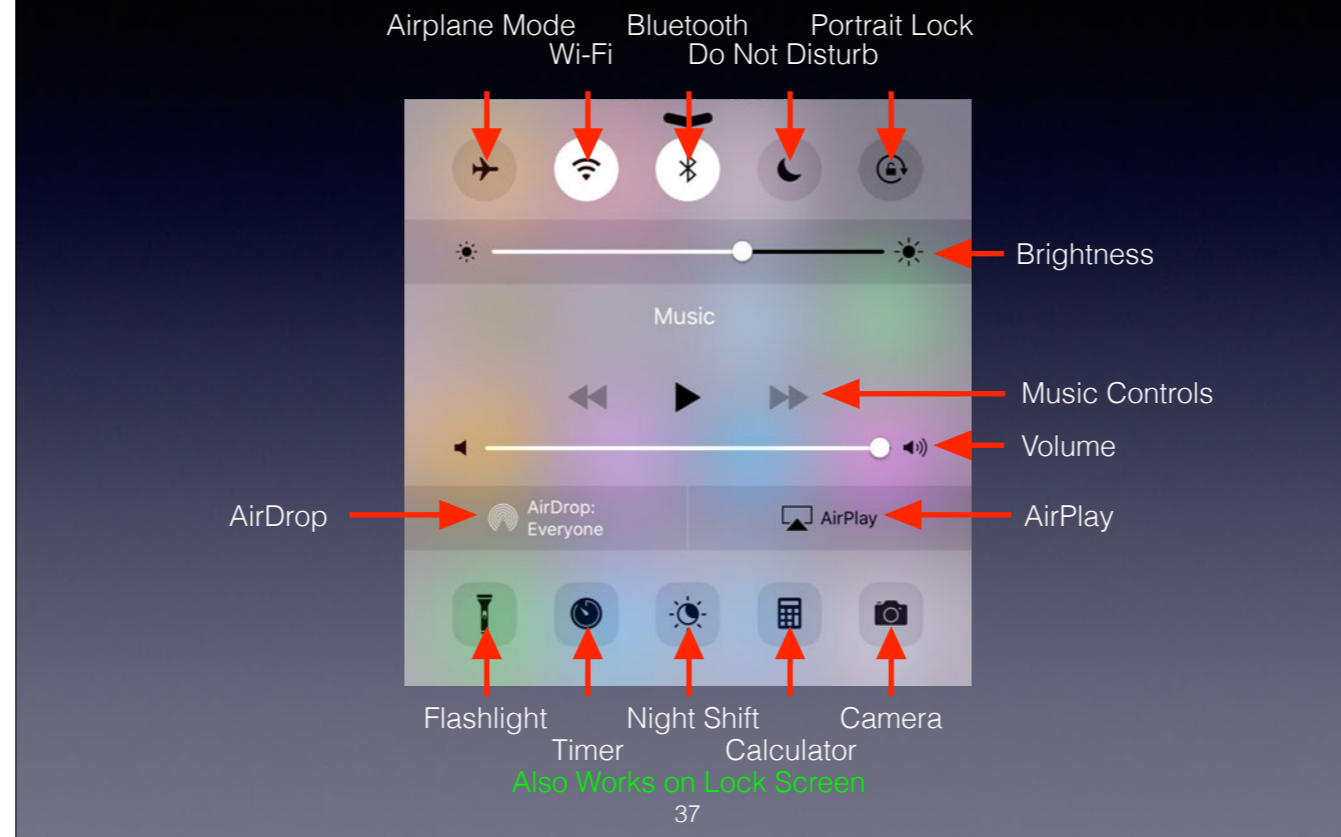
Control Center

Also Works on Lock Screen



AirPlay Device Selection

Control Center Controls



Very convenient access to major settings without the need to unlock the iPhone.

With AirDrop you can share content from apps such as Photos, Safari, Contacts, and more by tapping the Share Icon.

Night Shift added in iOS 9.3.

Today & Notifications



Swipe Down from
Top of Screen to Reveal
Today & Notifications

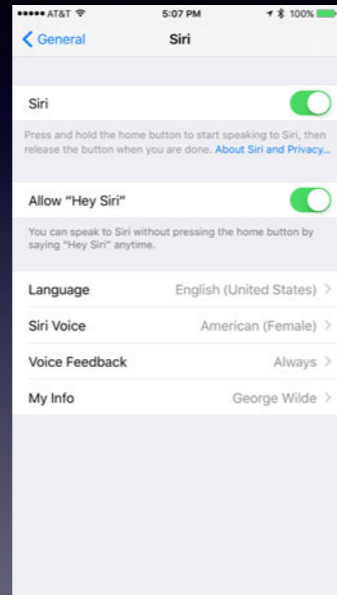
Today
Also Works on Lock Screen

Notifications

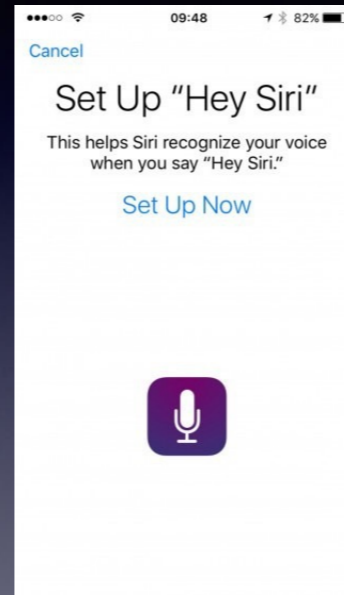
Swipe Down from Top of Screen - not Middle, or else you will get Spotlight Search.

Set Up “Hey Siri”

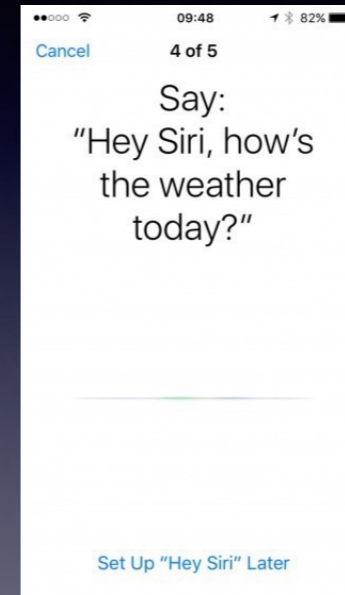
Settings - General - Siri



Turn ON Allow “Hey Siri”



Follow Steps to Train Siri to Recognize Your Voice



On iPhone 6s and 6s Plus “Hey Siri” Works Even With iPhone Asleep

Unlike Dictation and other Siri actions, “Hey Siri” needs to recognize you voice so it won’t be activated on your phone by other people.

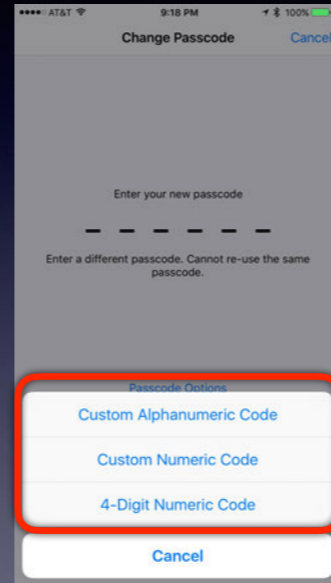
Therefore it needs to be trained by analyzing samples of your voice.

iPhone Security - Passcodes

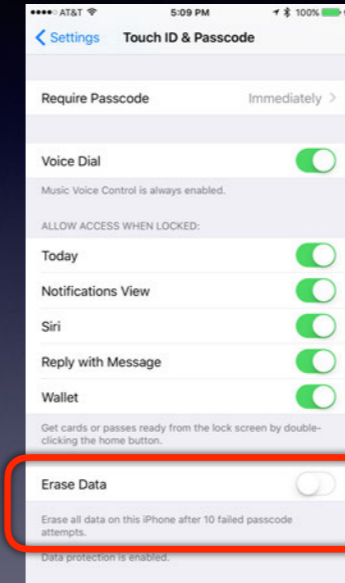
Settings - Touch ID & Passcode



Tap Change Passcode



Enter Desired Passcode



The 10 Attempts Setting is Off by Default (The FBI Bugaboo)

With the 10 Failed Passcode Attempts Setting ON, delays between passcode attempts progressively increase, as follows:

- 1-4 attempts: no delay
- 5 attempts: 1 minute
- 6 attempts: 5 minutes
- 7-8 attempts: 15 minutes
- 9 attempts: 1 hour
- After 10 attempts all data is erased

Passcode Considerations

Use Longer and More Complicated Passwords for Greater Protection

| Kind of Passcode | Passcode Length | Time to Crack |
|-----------------------------|-----------------|---------------|
| Numbers Only | 4 | 13 Minutes |
| Numbers Only | 6 | 22 Hours |
| Numbers Only | 8 | 93 Days |
| Lowercase Letters & Numbers | 6 | 5.5 Years |
| Lowercase Letters & Numbers | 8 | 7,152 Years |

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The iPhone is built in such a way that even with brute-force, you can only try one passcode every 80 milliseconds, or 750 tries a minute. The original iPhones had a four-digit numerical passcode, of which there are only 10,000 combinations. That would take a little over 13 minutes to crack. But on current iPhones you can use any combination of letters, numbers, and other characters, and as the passcode gets longer and more complex, the time taken to crack it rises pretty quickly.

The Time to Crack is the maximum time assuming one try every 80 milliseconds. The average time is half that. Obviously with commonly used passwords such as 123456 the Time to Crack is almost immediate.

Security Considerations

- A passcode is required to set up Touch ID
- Touch ID is automatically disabled after 48-hours or when rebooting the iPhone or iPad
- If data is extremely sensitive, do not use Touch ID
 - Fingerprints are very convenient, but can be bypassed and are not as secure as a passcode
 - US law suggests that while law enforcement officers can require you to provide a fingerprint to unlock a device, the same is not true of a passcode

How About iCloud?

Who Has the Encryption Keys?

| Information | Where Stored? | Whose Keys? |
|-------------------------------|--|---|
| iCloud Backups | Apple Servers | Apple's Keys |
| iTunes Backups | Your Computer | Your Keys, if you choose encryption |
| iMessages | Your Devices & Recipient Devices | Your Keys |
| iCloud Mail | Only Encrypted in Transit (not on Servers) | Apple's Keys (unless end-to-end encryption) |
| Photos, Contacts and Calendar | Your Devices & Apple Servers (if iCloud) | Apple's Keys |
| Notes (iOS 9.3) | Your Devices & Apple Servers (if iCloud) | Your Keys, if you choose encryption |

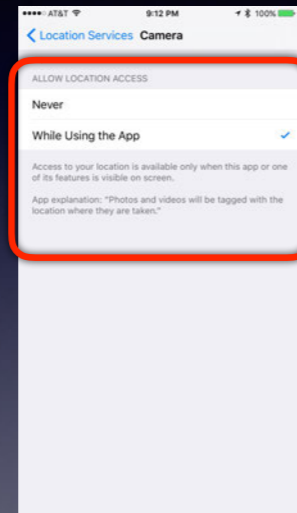
43

iCloud secures your data by encrypting it when it's sent over the Internet, storing it in an encrypted format when kept on server, and using secure tokens for authentication. This means that your data and photos are protected from unauthorized access both while it is being transmitted to your devices and when it is stored in the cloud. iCloud uses a minimum of 128-bit AES (Advanced Encryption Standard) encryption—the same level of security employed by major financial institutions—and never provides encryption keys to any third parties. iCloud Keychain uses 256-bit AES encryption to store and transmit passwords and credit card information. It also uses elliptic curve asymmetric cryptography and key wrapping.

Consistent with standard industry practice, iCloud does not encrypt data stored on its IMAP mail servers, however mail is encrypted using SSL (Secure Sockets Layer) when sent over the internet. All Apple email clients support optional S/MIME encryption. S/MIME (Secure/Multipurpose Internet Mail Extensions) is a standard for public key encryption and signing of MIME data.

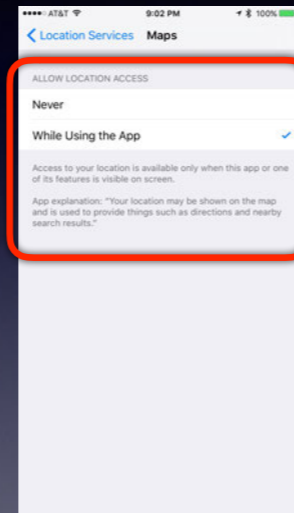
Example Privacy Settings

Settings - Privacy -
Location Services -
Camera



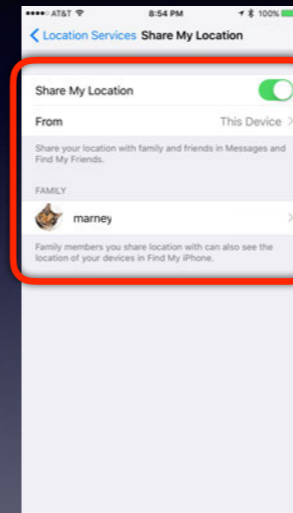
Control Location
Settings for
Camera App

Settings - Privacy -
Location Services -
Maps



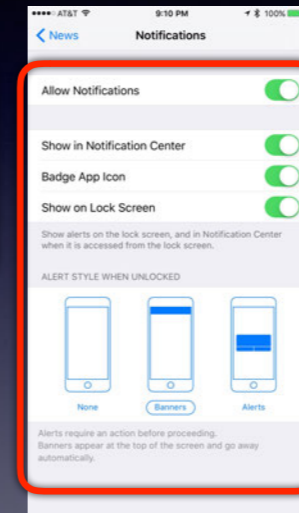
Control Location
Settings for
Maps App

Settings - Privacy -
Location Services -
Share My Location



Control Sharing
Your Location
with Others

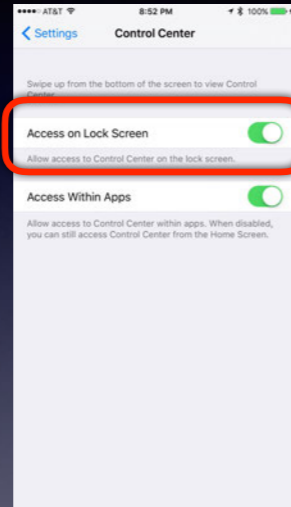
Settings - News -
Notifications



Control How &
Where Notifications
are Displayed
for News App

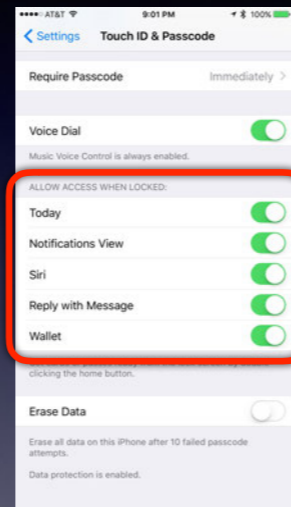
iPhone Privacy

Settings - Control Center



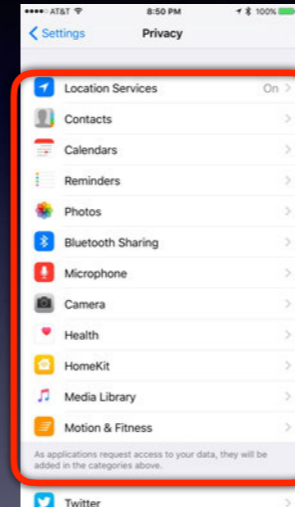
Select Whether Control Center Appears on Lock Screen

Settings - Touch ID & Passcode



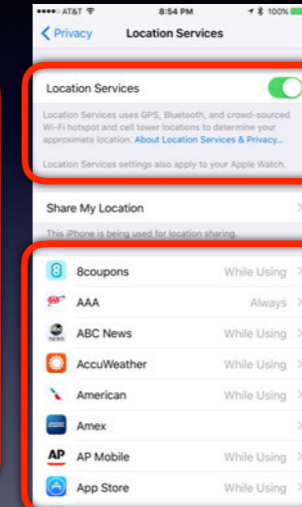
Select What is Accessible from Lock Screen

Settings - Privacy



Control How Your Key Information Is Used

Settings - Privacy - Location Services



Control How Your Location Information Is Used

Control what can appear on your Lock Screen.

Control how your information is used.

Location Services are one of the major causes of battery drain

Location Services settings available (depending on App) are “Never”, “While Using the App”, and “Always”

iCloud Basics

- iCloud permits sharing of data among multiple iOS Devices and Macs, and backing up iOS Devices
- 5GB of storage is free (includes free iCloud email account) - Additional iCloud storage may be purchased
- Purchased music, Apps, TV shows, movies, and books don't count against available space
- Included features: iCloud Mail, Contacts, Calendar, Notes, Reminders, Bookmarks, Reading List, iCloud Tabs, iCloud Keychain, iMovie Theater, Find My iPhone, Find My Friends, Family Sharing, and Backup & Restore

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iCloud Pricing:

5 GB: Free

50 GB: \$0.99

200 GB: \$2.99

1 TB: \$9.99

After setting up iCloud on your iOS device or Mac, you have access to the following features.

- Content everywhere: Automatically get purchases from the iTunes Store, App Store, and iBooks Store on all your devices, and download past purchases anytime. For more information, see [What is content everywhere?](#)
- Photos: Use iCloud Photo Library to store your entire library of photos and videos in iCloud, and let iCloud keep them up to date on iCloud.com and on your devices set up for iCloud Photo Library. Use iCloud Photo Sharing to share albums of photos and videos with just the people you choose, and let them add photos, videos, and comments to your shared albums. You can also use My Photo Stream to upload just your most recent photos and view them on devices not already using iCloud Photo Library.
- iCloud Drive: Safely store and organize all kinds of documents in iCloud. Work with them in iCloud Drive on iCloud.com and on your devices set up for iCloud Drive.
- Family Sharing: Up to six family members can share their iTunes Store, App Store, and iBooks Store purchases without sharing accounts. Pay for family purchases with the same credit card and approve kids' spending right from a parent's device. Plus, share photos, a family calendar, reminders, and locations. For more information, see the [Apple Support article Family Sharing](#).
- Mail, Contacts, Calendar, Notes, and Reminders: Keep your mail, contacts, calendars, notes, and reminders up to date using Mail, Contacts, Calendar, Notes, and Reminders on iCloud.com, and using apps on your iOS devices, Mac, and Windows computer.
- Find My iPhone: Find your missing iOS device or Mac, or one belonging to a family member, by using Find My iPhone on iCloud.com. Find My iPhone includes Activation Lock, which makes it harder for anyone to use or sell your iPhone, iPad, or iPod touch if it's ever lost or stolen.
- Find My Friends: You, your family, and friends can share locations and follow each other using the Find My Friends app on an iOS device. After you and your friends do that, you can locate each other on a map in Find My Friends on iCloud.com.
- Pages, Numbers, and Keynote: Use Pages, Numbers, and Keynote on iCloud.com and the corresponding apps on your iOS devices and Mac to store your spreadsheets, presentations, and other documents in iCloud Drive. iCloud keeps those items up to date everywhere you view and edit them.
- Bookmarks, Reading List, and iCloud Tabs: See the webpages you have open on your Mac and iOS devices (your iCloud Tabs). Read articles from your Reading List, even when you're offline. Plus, use the same bookmarks on your iOS devices, Mac, and Windows computer.
- iCloud Keychain: Keep your passwords, credit card information, and more up to date, and have it entered automatically on your iOS devices and Mac computers.
- iMovie Theater: Watch your finished movies and trailers on all your devices. For more information, see [iMovie Help for iPhone, iPad, or Mac](#).
- Backup and restore: iCloud automatically backs up your iOS device daily over Wi-Fi when your device is turned on, locked, and connected to a power source. You can use your iCloud backup to restore your iOS device or set up a new one.
- Back to My Mac: Securely connect your Mac to your remote Mac over the Internet, then share the screen or files of your remote Mac.

Photos in iCloud

- iCloud Photo Library stores your entire library of photos and videos in iCloud - counts against your iCloud storage space
- iCloud Photo Sharing shares albums of photos and videos with people you choose - It does NOT count against your iCloud storage space, but has limits on numbers of albums, photos, videos, and invitees
- My Photo Stream uploads just your most recent photos and keeps them for only 30 days - It does NOT count against your iCloud storage space

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Neither My Photo Stream nor iCloud Photo Sharing count against your iCloud Storage Space, but iCloud Photo Library does.

My Photo Stream and iCloud Photo Sharing have been around for a long time. The newest iCloud photo feature is iCloud Photo Library.

My Photo Stream was designed to permit automatic access to all of your photos taken on any one of your devices (say an iPhone), but only for a limited time to allow you to move the desired photos to any of your other devices.

iCloud Photo Sharing is a hidden jewel - few really know about its capabilities. Through judicious use, you can set up multiple albums in iCloud to store most, if not all, of your photos without incurring any charges.

iCloud Photo Library stores all of your photos in iCloud, and makes them accessible from all of your devices, including Macs and Apple TV.

Music in iCloud

- iCloud Music Library allows you to listen to your entire music selection from all of your devices - It is included in both iTunes Match and Apple Music and does NOT count against your iCloud storage space
- iTunes Match costs \$24.99 per year, and allows you to upload to the iCloud Music Library all of your music, including your purchased music and ripped CDs - downloaded music to your other devices is DRM-free
- Apple Music costs \$9.99 per month (\$14.99 for families), and gives you access to the entire Apple Music Collection as long as your subscription is active - you can both stream and download music for no additional cost, but downloaded music has DRM protection and cannot be played once the subscription becomes inactive

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None of the music services count against your iCloud Storage Space.

iTunes Match is a great deal if you have many ripped CDs that you want to use on all of your devices. Apple uploads and stores on its servers any music you have that is not already contained in the iTunes Music Catalog. However, the quality of the stored music on Apple's servers may be better or worse than the original music on your Mac. You should keep any high quality recordings (for example those ripped using the Apple Lossless Encoder) on your Mac because downloaded versions will not be of such high quality, since they are in AAC (Advanced Audio Coding) format. However, the iTunes Music Catalog songs may be of higher quality than MP3 encoded songs on your Mac. And yes, iTunes Match is set up from your Mac - not the iPhone.

DRM (Digital Rights Management) schemes are various access control technologies that are used to restrict usage of proprietary hardware and copyrighted works.

The iTunes Music Catalog of music available for purchase is not identical to the Apple Music Collection, since not all artists or labels permit streaming of their music.

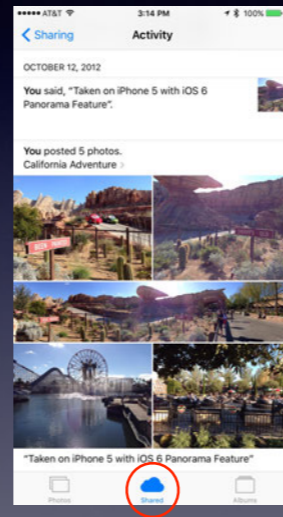
Photos & Music in iCloud

Photos



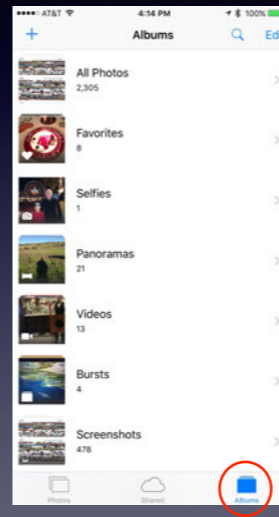
Photos from
iCloud Photo Library

Photos



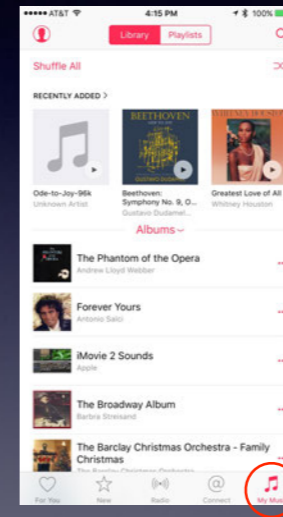
Photos from
iCloud Photo Sharing

Photos



Albums from
iCloud Photo Library

Music



Music from
iTunes Match

iCloud Settings

The image displays four screenshots of an iPhone's settings menu, illustrating the configuration of various iCloud services. Red boxes highlight the specific settings being discussed in the text below.

- Settings - iCloud:** Shows the main iCloud settings page with various services listed as 'On'. The 'iCloud Backup' option is highlighted with a red box.
- Settings - iCloud - Backup:** Shows the 'iCloud Backup' settings page. The 'iCloud Backup' toggle is turned on, and the 'Back Up Now' button is highlighted with a red box.
- Settings - Photos & Camera:** Shows the 'Photos & Camera' settings page. The 'iCloud Photo Library' toggle is turned on, and the 'Upload to My Photo Stream' and 'iCloud Photo Sharing' toggles are also highlighted with red boxes.
- Settings - Music:** Shows the 'Music' settings page. The 'Show Apple Music' and 'iCloud Music Library' toggles are turned on, and both are highlighted with red boxes.

Select Which Apps Will Use iCloud Turn ON iCloud Backup Select iCloud Photo Options Select iCloud Music Options

50

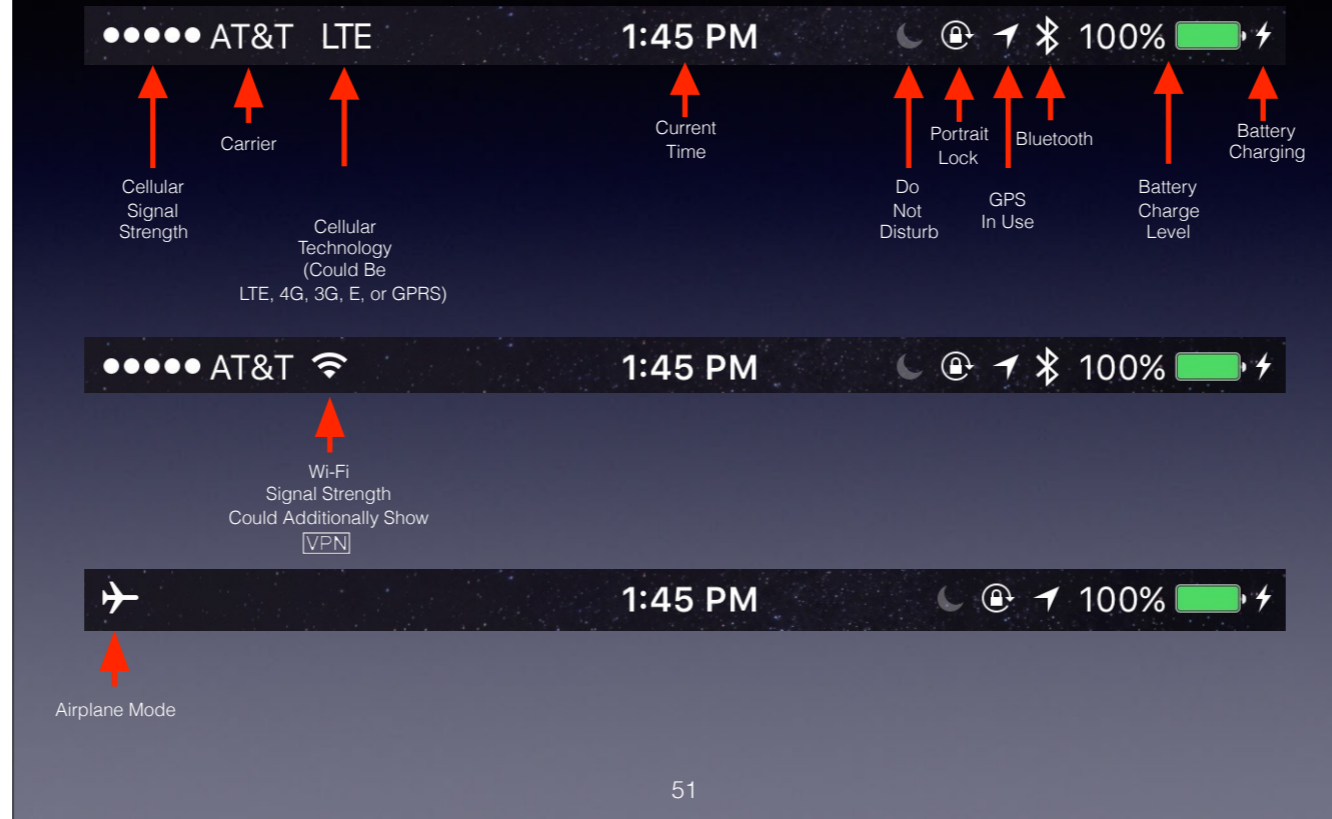
You can select any or all of the iCloud Photo and Music options.

My Photo Stream photos will only be downloaded to devices not using iCloud Photo Library, because these photos are already contained in iCloud Photo Library.

Just remember that iCloud Photo Library uses your iCloud storage space and Apple Music has a monthly fee.

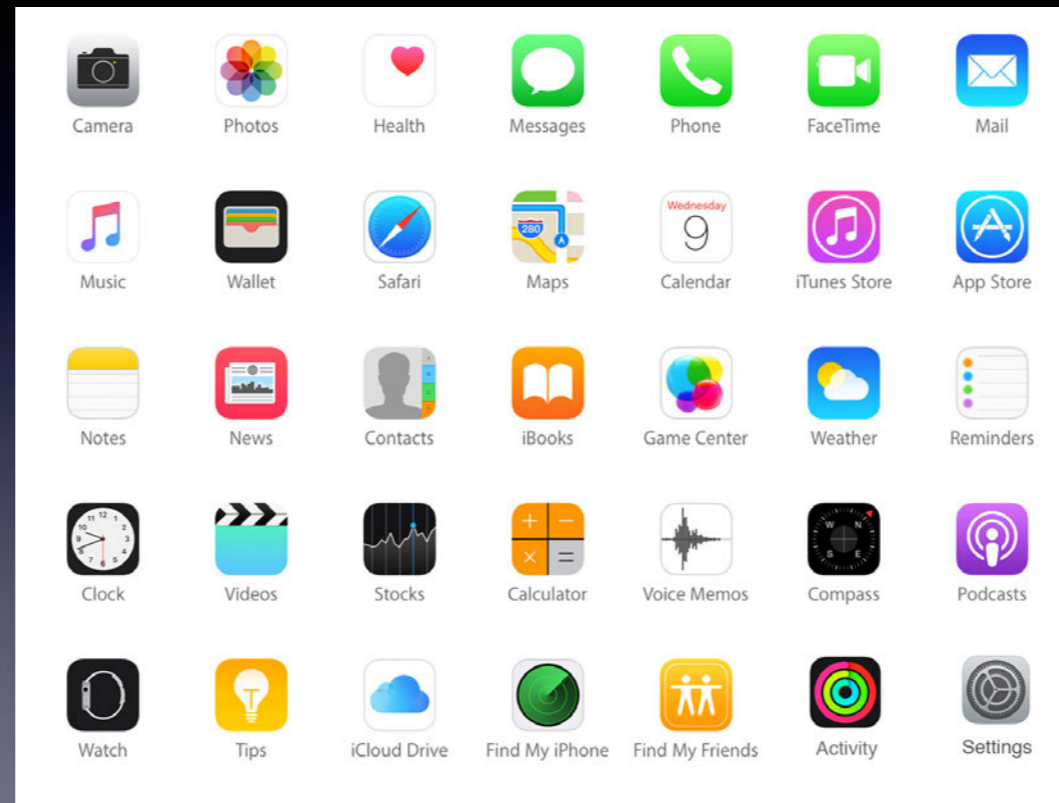
With iCloud Photo Library you can select whether full-resolution photos and videos or optimized photos and videos are downloaded and stored on your iPhone. Optimized versions can save space.

iPhone Status Bar Icons



Don't worry about what appears to the right of your Carrier designator in the Status Bar - it just indicates the particular cellular technology being used.

iPhone Core Apps



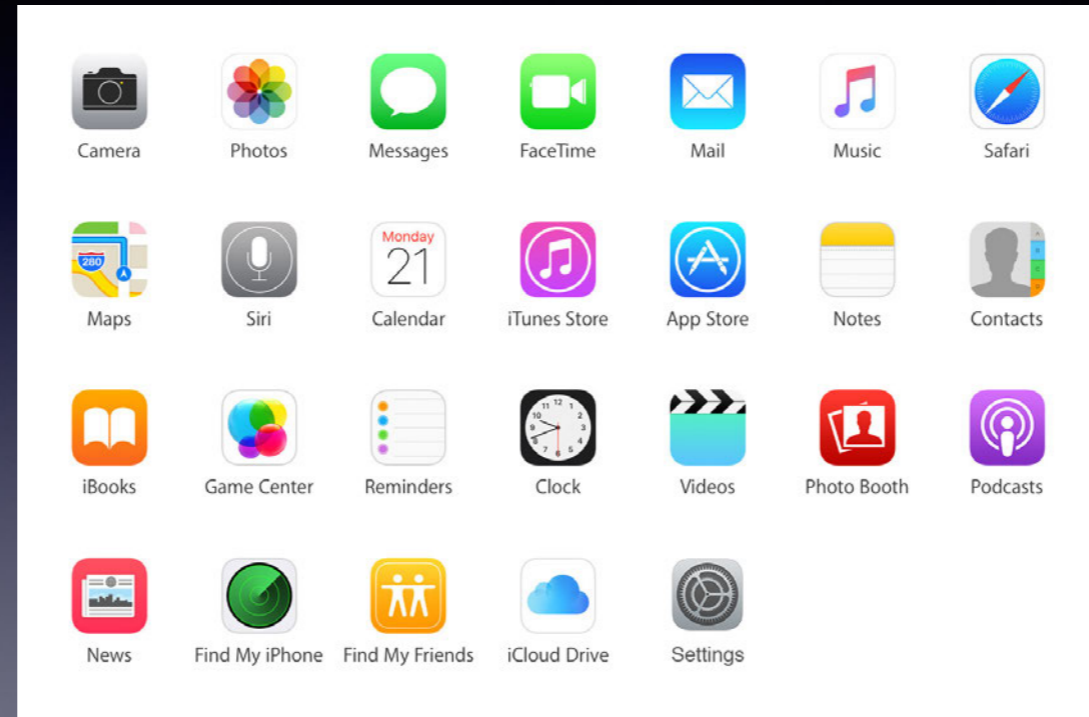
52

35 Core Apps on iPhone (31 on iPod Touch)

iCloud Drive appears on Home Screen if "Show on Home Screen" is turned ON in iCloud Settings.

Activity App only appears on Home Screen if Apple Watch in use.

iPad Core Apps



53

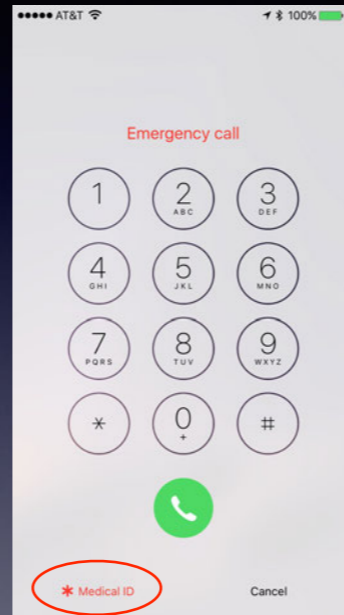
26 Core Apps on iPad

iCloud Drive appears on Home Screen if "Show on Home Screen" is turned ON in iCloud Settings.

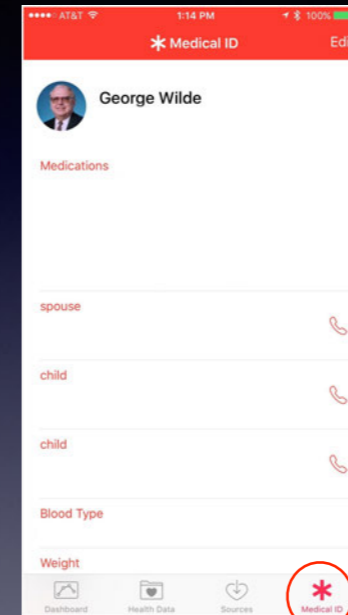
Using iPhone in an Emergency



Tap Emergency from Passcode Screen



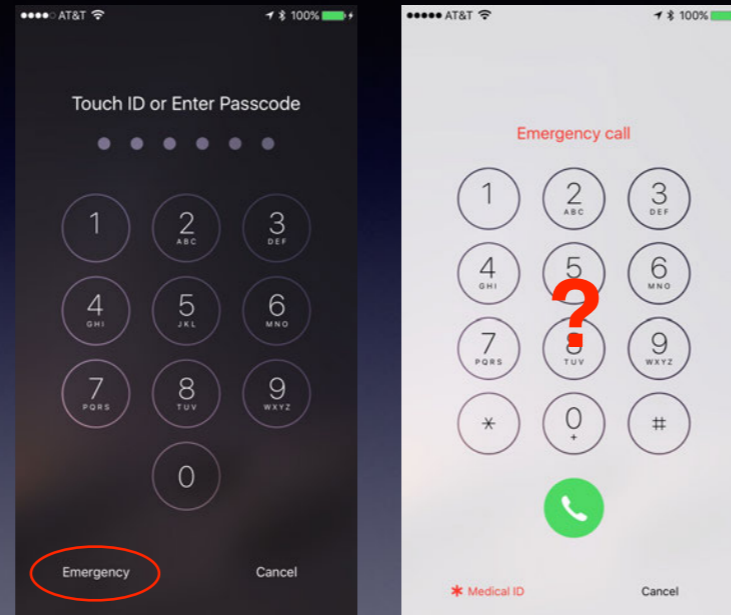
Tap Medical ID



Set Medical Information in Health App to Make It Accessible from Lock Screen

Your medical and emergency contact information is set up in the Health App.

Calling '911' from Lock Screen



Tap Emergency
on Lock Screen

Dial Emergency Number
- But What Is It?

But Wait!

'911' is NOT the Emergency Number used in most countries - '999' and '112' are very commonly used (especially in Europe).

The GSM standard (used by over 90% of the carriers worldwide) uses '112' as a world-wide emergency number. When '112' is dialed from a GSM phone, the network will automatically redirect you to the local emergency dispatch, *if it's available*.

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Emergency Numbers in Various Countries:

North America:

USA and Canada – 911; Mexico – 066, 060, or 080 (some areas direct 911 to local services)

Asia :

China – 999 in most large cities. Elsewhere, 120*; Hong Kong – 999; India – 102; Indonesia – 118/119*. Search and Rescue – 115. Natural disaster – 129

Iran – 110 (112 from mobile); Israel – 101* (112 from mobile); Japan and Korea – 119*; Malaysia – 999; Mongolia – 103

Philippines – 117 (112 and 911 redirect to 117); Saudi Arabia – 997*. Rescue emergency – 911, 112, or 08; Singapore – 995

Thailand – 1669*. "Tourist" police (English speaking) – 1155; UAE – 998* or 999*; Vietnam – 115*

Africa:

Egypt – 123*. Tourist police – 126; Ghana – 999; Morocco – 15*; Nigeria – 199

South Africa – 10177*. Police and Fire – 10111 (112 from mobile)

Zambia – 991* (112 from mobile); Zimbabwe – 999

Europe:

United Kingdom – 999 or 112; European Union and many other European nations – 112

Oceania:

Australia – 000; New Zealand – 111; Fiji – 911; Vanuatu – 112

Central America and Caribbean:

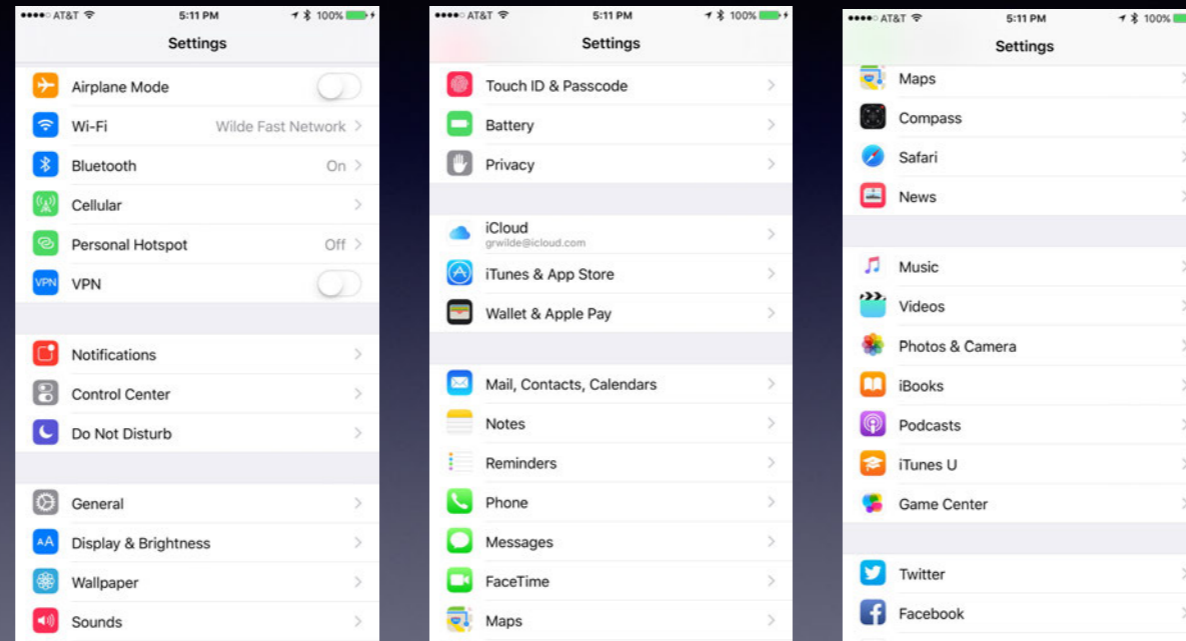
Guatemala – 120*; Barbados – 511*; Jamaica – 110*; Nicaragua – 118*; Honduras – 199*

South America:

Argentina – 107* (911 will work in certain areas as emergency dispatch); Bolivia – 118*

Brazil – 192*; Chile – 131*; Colombia – 112 or 123; Paraguay and Uruguay – 911; Suriname – 115; Venezuela – 171

The Settings App

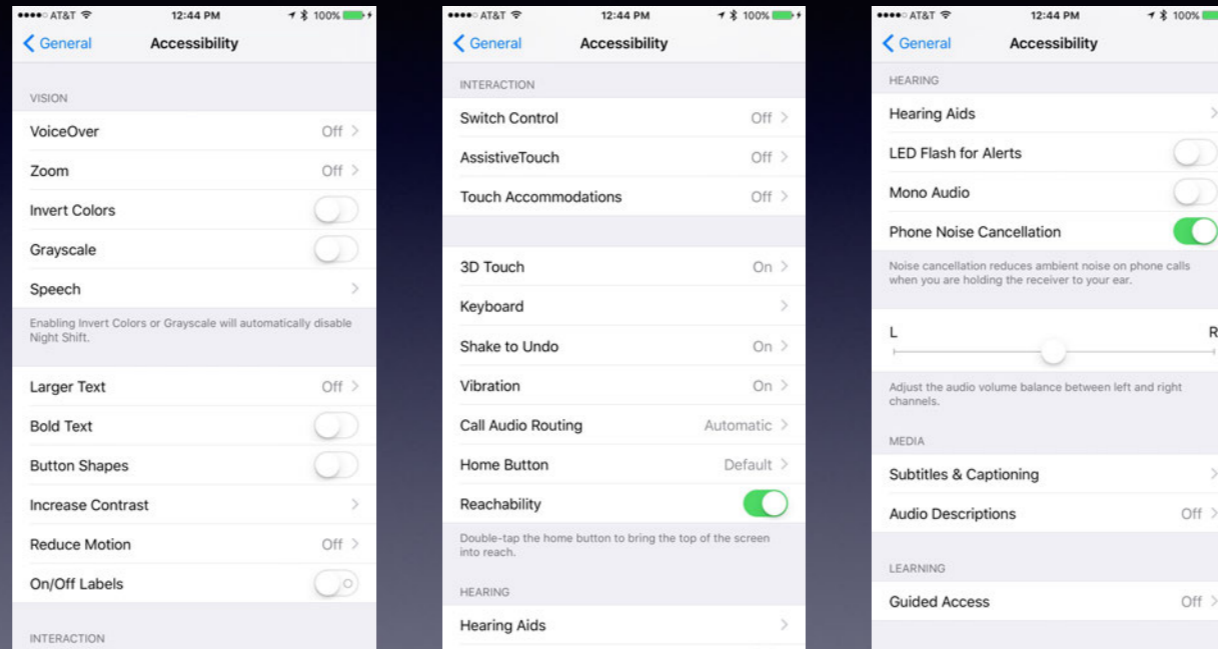


Settings App Contains all Important iPhone Settings

The Settings App scrolls on forever, especially if you have many third party Apps. The above three screen captures cover Apple's Core Apps for the iPhone.

Accessibility Settings

Settings - General - Accessibility



Accessibility Settings Especially Useful for Many Individuals

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Especially useful for those with sight, hearing, and other handicaps - but potentially useful for all.

Monitor Your Resources

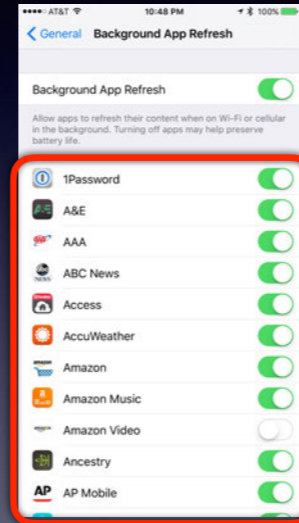
Battery Usage Too High?

Settings - Battery



Find What Apps are Draining Your Battery

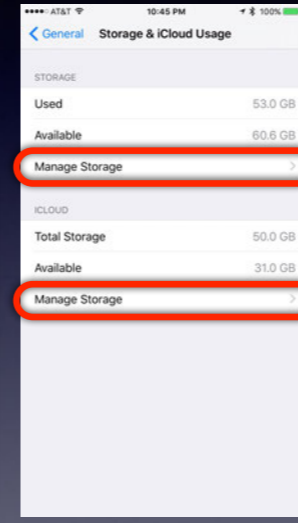
Settings - General - Background App Refresh



Turn Off Background App Refresh and/or Location Services for Selective Apps

Memory Usage Excessive?

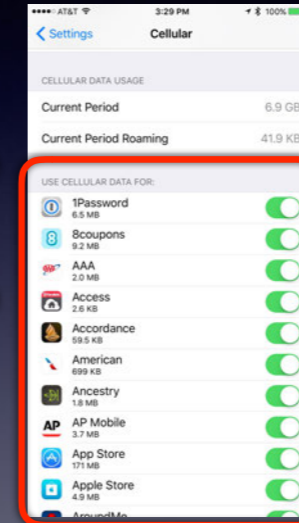
Settings - General - Storage & iCloud Usage



Find What Apps are Consuming iPhone and iCloud Memory

Cellular Data Usage Excessive?

Settings - Cellular



Turn Off Cellular Data for Selective Apps

Settings - Privacy - Location Services

58

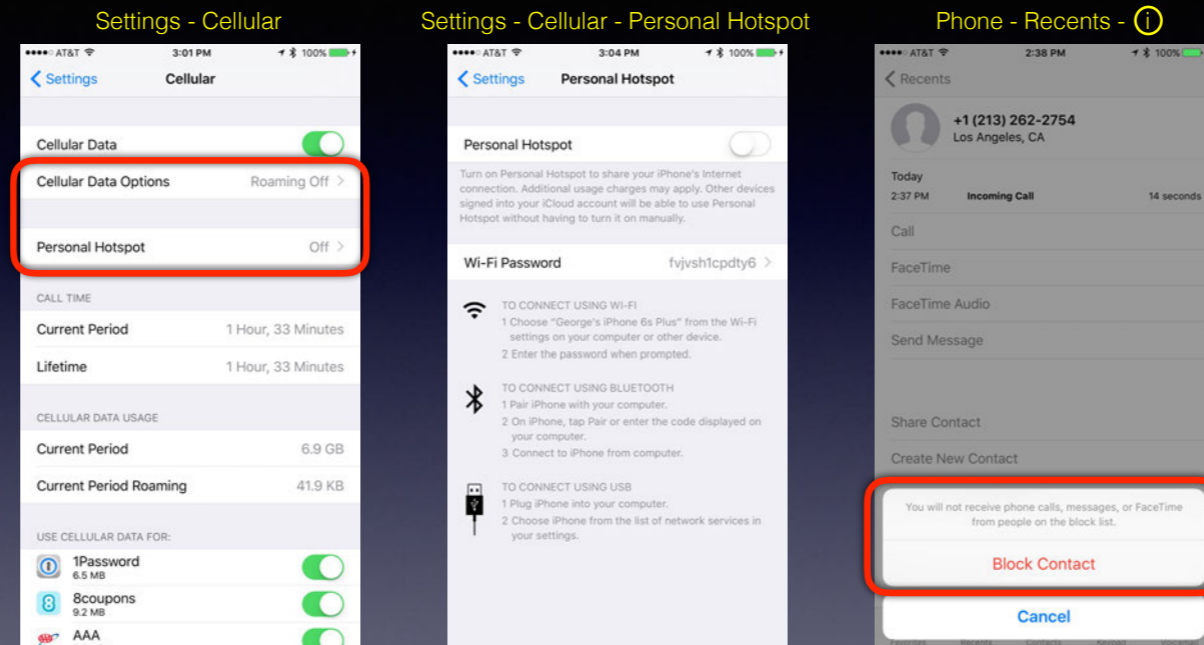
Location Services are one of the major causes of battery drain.

Settings available (depending on App) are “Never”, “While Using the App”, and “Always”.

Low Power Mode is available to minimize battery usage.

Turning On Airplane mode or turning Off Wi-Fi and Bluetooth are also helpful.

Important Phone Settings



Turn Off Cellular Data Roaming to Avoid Large Data Charges When Roaming on Other Carriers

Personal Hotspot Allows You to Use Your iPhone Internet Connection with Other Devices - May be Costly with Cellular Data

Block Calls You Do Not Want to Receive

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Cellular Data Roaming occurs when you are connected to a network other than the one your SIM Card is for, often in another country.

Turn Cellular Data Roaming Off to prevent excessive charges, especially when traveling in foreign countries. This does not prevent Cellular Calls, only Cellular Internet Access. Even with Cellular Data Roaming Off you can still incur significant Cellular Call charges. To prevent Cellular Calls while traveling in other countries, turn on Airplane Mode or remove the SIM Card (It is very small - don't lose it). If you remove the SIM Card, place it in a sealed envelope to avoid losing it.

Here's how these Cellular Call charges can occur:

Someone calls your cell phone while you're overseas, and you choose not to answer. The call is routed from your carrier to the local telecom, which sends the unanswered call back to your local carrier. Your carrier charges you for forwarding the call, the local carrier charges to send it back, and you end up owing up to \$5 per minute, depending on your location and carrier. These charges apply even if the caller doesn't leave a voice message. If he does leave a message, some carriers add an extra delivery fee. If you don't disable Cellular Calling when in other countries, the local carrier automatically registers your device. The registration can last up to 24 hours, even if the phone is turned off. At that point, any calls to your number are subject to roaming fees.

But if you have an emergency, you can easily restore Cellular Calling and be thankful of your ability to place a call even with these roaming fees.

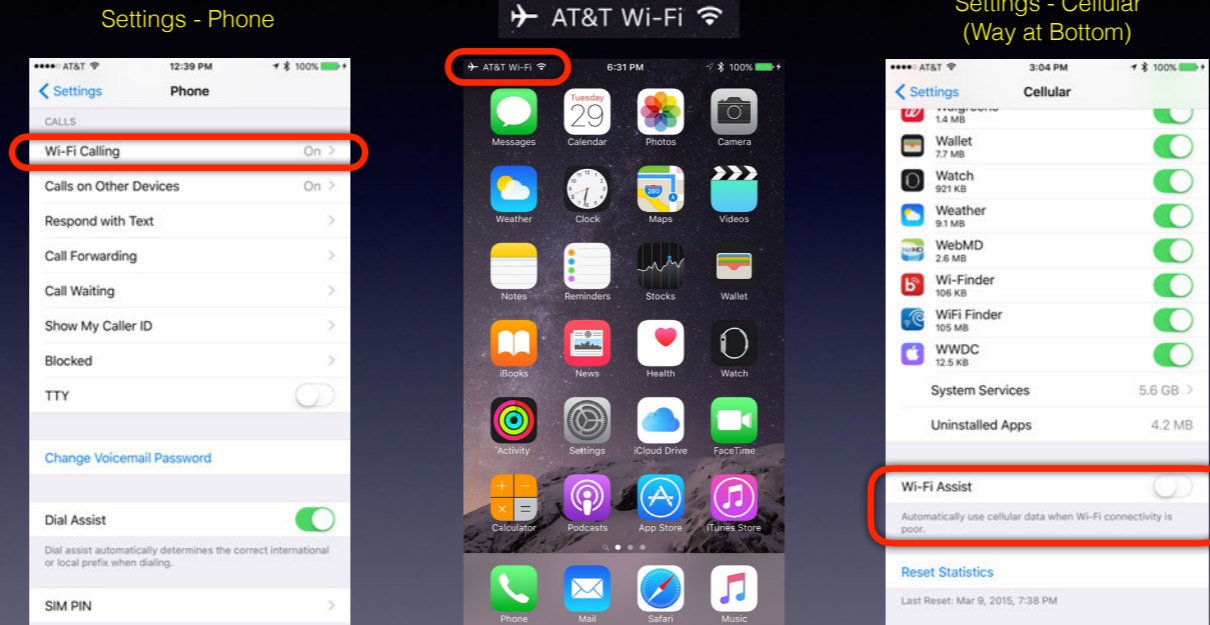
You can still turn Wi-Fi and Bluetooth ON when in Airplane mode, but GPS is not active which will affect performance of map and navigation programs.

If your iPhone is unlocked, you can also purchase, usually at reasonable rates, a Nano SIM Card for a local carrier within the country you are visiting. Many carriers (including AT&T) also offer a temporary or monthly international phone and/or data plan.

If you need to connect your laptop or iPad to the internet, but have no Wi-Fi connection you can use a Personal Hotspot (if your carrier allows it). However, this can dramatically increase your data usage. By using Personal Hotspot on your iPhone you can avoid additional charges for iPad cellular access.

You can also block callers you do not want to call you - wouldn't this be great on landline phones since the Do Not Call List doesn't work! The individual or company has to call you once - but after that they can be blocked forever unless you unblock them.

Important Phone Settings



Turn On Wi-Fi Calling to Permit Calls Over Wi-Fi When Cellular is Unavailable

With iOS 9.3, Wi-Fi Calling Can Now be Used for Free US Calls When Traveling Outside the US

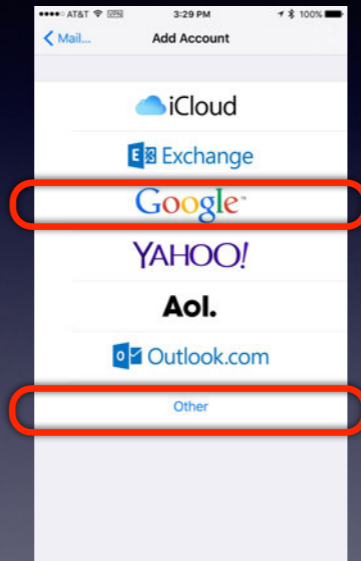
Turn Off Wi-Fi Assist to Prevent Using Cellular for Data When Wi-Fi Signal is Weak

Wi-Fi Calling is a great new feature available from some carriers. With AT&T you can even make free calls from other countries back to the US using Wi-Fi Calling. AT&T Wi-Fi Calling is shown in the second screen capture with Airplane Mode On. As long as you have a Wi-Fi connection you can use it for calls to or within the US. International rates apply for calls to other countries.

Be cautious using Wi-Fi Assist. I set mine to Off - the default used to be On, and is the subject of a Class Action Suit against Apple. Basically it allows Apps to use cellular data if the Wi-Fi signal is weak - which could even be in some areas of your house or business. This is good in theory, but could result in excessive cellular data charges that you are unaware of.

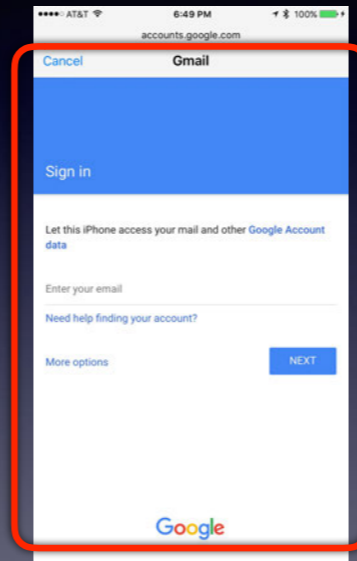
Adding Additional Email Accounts

Settings - Mail, Contacts, Calendars
- Add Account



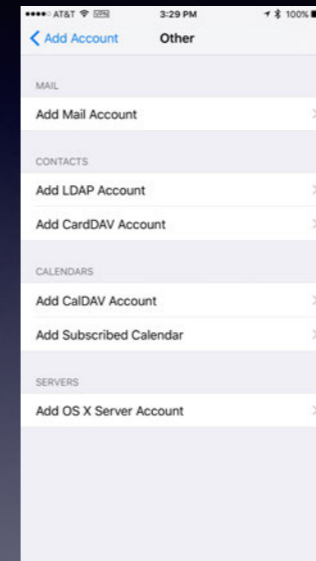
Common Providers are Listed - If Yours Not Listed Select Other

Settings - Mail, Contacts, Calendars
- Add Account - Gmail



With Listed Providers Just Enter Your Email Address and Credentials

Settings - Mail, Contacts, Calendars
- Add Account - Other



With Other Providers You May Also Need to Enter Mail Server Information

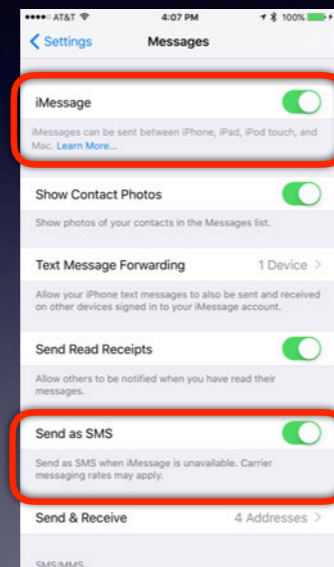
With any of the listed services, you only need to enter your email address, user name, and password. The iPhone does the rest.

Even though your email provider may not be listed, the iPhone may still recognize the provider and automatically insert the proper mail server information. I have eight separate email accounts, and the iPhone automatically recognized all but one. I found the iPhone even recognized Time Warner Cable's Road Runner IMAP server - and I previously thought they only had POP Servers.

iMessages or SMS/MMS Messages?

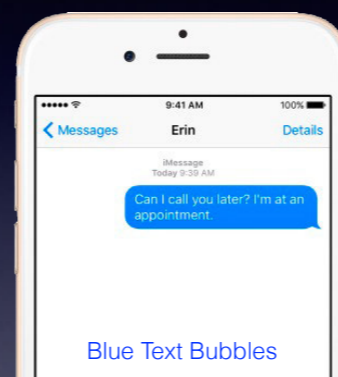
Messages App

Settings - Messages



Set to Send as SMS When iMessage Unavailable

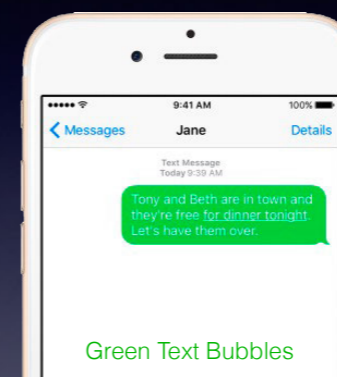
iMessage Message



Blue Text Bubbles

Texts, Photos, or Videos Sent to iOS Devices and Macs Using Wi-Fi or Cellular Data

SMS/MMS Message



Green Text Bubbles

Texts and Photos Sent to Cell Phones Using SMS (Short Message Service)

Texting Carrier Charges May Apply

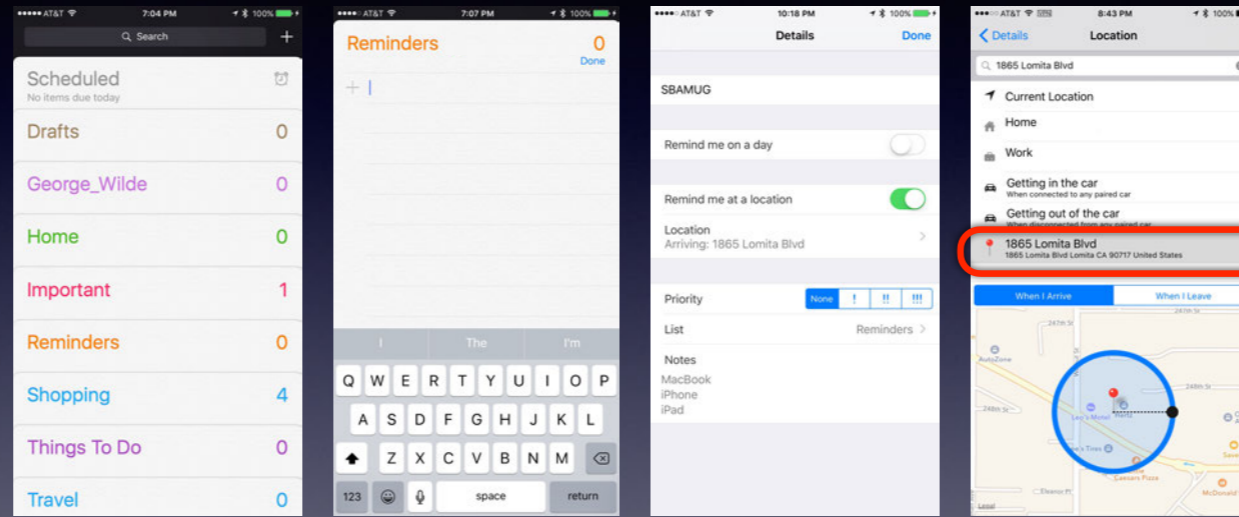
iMessages are texts, photos, or videos that you send to iOS devices and Macs over Wi-Fi or cellular-data networks. These messages appear in blue text bubbles.

If you aren't using iMessage, you can use SMS. SMS/MMS messages are texts and photos that you send to other cell phones or iOS devices. These messages appear in green text bubbles on your device. Cellular carriers may charge extra for these SMS/MMS messages unless you have unlimited texting.

Short Message Service (SMS) commonly referred to as "text messaging," is a service for sending short messages of up to 160 characters to mobile devices, including cellular phones, smartphones and PDAs. Multimedia Messaging Service (MMS) is a standard way to send messages that include multimedia content to and from mobile phones over a cellular network. Users and providers may refer to such a message as a PXT, a picture message, or a multimedia message. The MMS standard extends the SMS capability, allowing the exchange of text messages greater than 160 characters in length. Unlike text-only SMS, MMS can deliver a variety of media, including up to forty seconds of video, one image, a slideshow of multiple images, or audio.

Adding a Reminder

Reminder App



Add Reminder to
"Reminders"

Enter Information

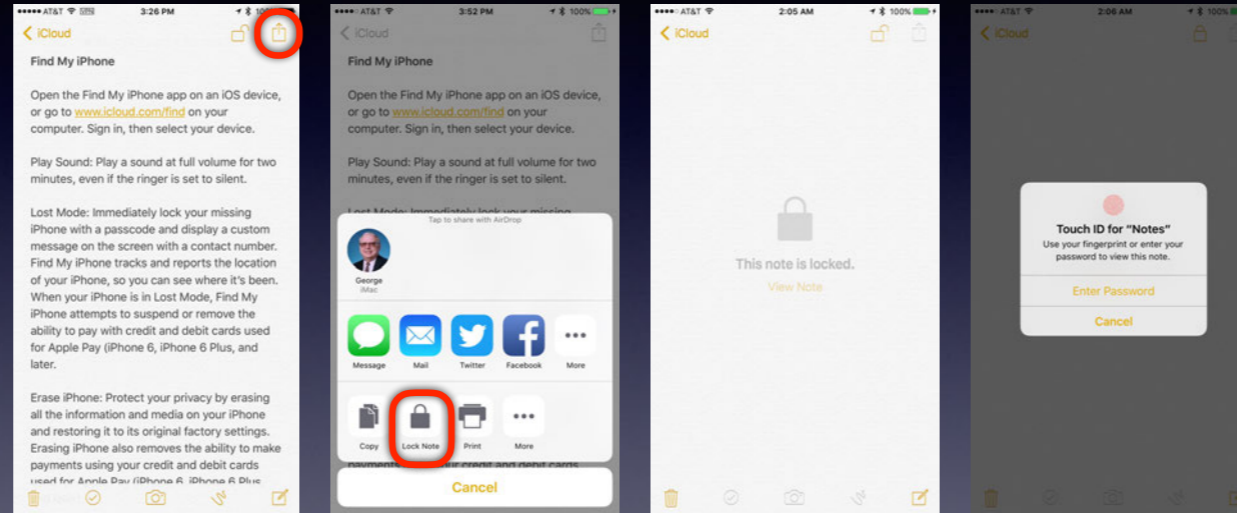
Select Location or
Time for Reminder
& Add Notes

Select Geofence
Around Location

In this case I am adding a reminder to bring in my MacBook, iPhone, and iPad when I arrive at the SBAMUG location. You can put a selectable geofence around any location which can be activated when arriving or leaving. In addition to specific locations you can select Home, Work, or Getting Into or Out of your car.

Secure Notes

Notes App



Tap Share Sheet
to Lock Note

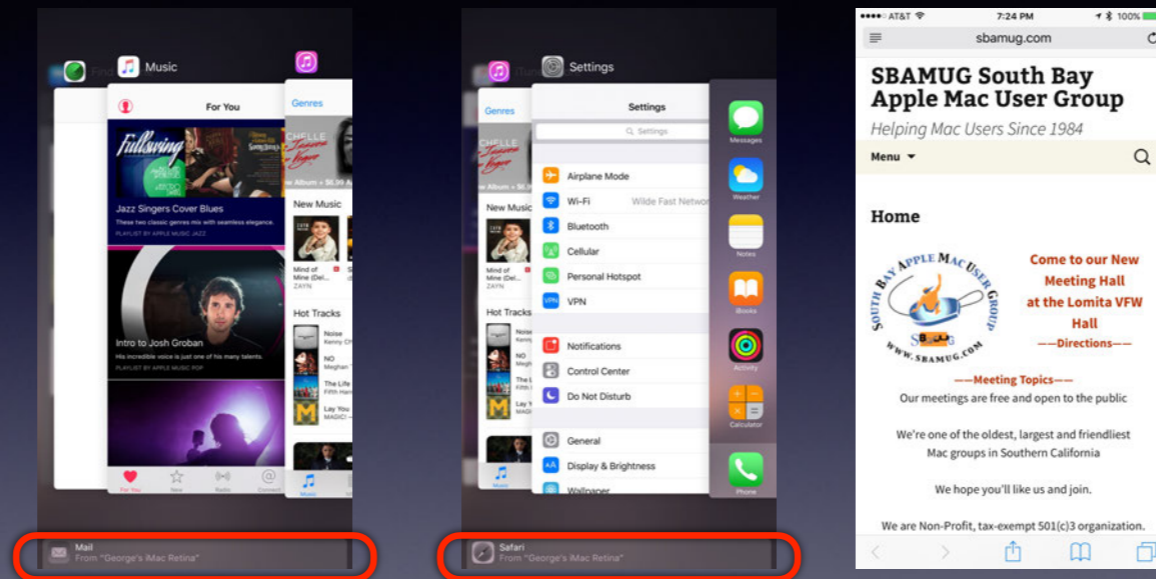
Tap "Lock Note"
to use Fingerprint or
Password to Lock Note

Viewing Locked Note
in Notes App

Use Fingerprint or
Password to Unlock Note

With iOS 9.3 you can now write secure notes that are synced to all of your devices through iCloud.

Handoff Between Devices



Double-Click Home Button to Show Multitasking Screen

Tap Banner at Bottom to Open Safari at Same Page as iMac

Resulting Safari Page

Also known as Continuity.

With Handoff you can begin work on one device (say a Mac running El Capitan) and continue work on another device (say an iPhone or iPad) at exactly the place you left off.

Handoff is not always that reliable, and only works with some Apps.

Multitasking on Recent iPads



Recent iPads offer Slide Over, Split View, and Picture in Picture.

The following iPad models support these features:

The Slide Over feature and Picture in Picture feature is supported in both the 12.9-inch and 9.7-inch iPad Pros, the iPad Air 2, the iPad Air, the iPad mini 4, the iPad mini 3, and the iPad mini 2.

The Split View feature is supported in both the 12.9-inch and 9.7-inch iPad Pros, the iPad Air 2, and the iPad mini 4.

Most Apple Core Apps support these features, but many third party Apps have not been updated to support them.

Summary

- We've covered most iPhone and iPad basics in this presentation
- These basic techniques apply when running most iPhone and iPad applications
- But we have only touched on the 35 iPhone Core Apps, let alone Apple's several other Apps (6 of which are preinstalled) and the more than 1.8 Million 3rd Party Apps in the iTunes App Store

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Pages, Numbers, Keynote, iMovie, GarageBand, and iTunes U are preinstalled on iPhone models with a capacity of 64 GB or higher and iPad models with a capacity of 32 GB or higher

Apple has at least 14 of its own Apps in the iTunes App Store in addition to the 35 Core Apps

Number of Apps in iTunes App Store:

iPhone - 1.5 Million (June 2015), iPad - 1 Million (March 2016), Apple Watch - 10,000 (September 2015), Apple TV - 5,000 (March 2016)