



# iOS Education Deployment Overview

iPad brings an amazing set of tools to the classroom. Teachers can easily customize lessons with interactive textbooks, rich media, and online courses. And students stay engaged and eager to learn with hands-on creative tools and apps on iPad.

It's easy to set up and manage iPad for your educational environment. Use this guide to help you deploy iPad in the best possible ways for your institution's needs.

To help you plan your iPad deployment, we've organized this guide into three key areas:

**Preparing to deploy.** Before bringing iPad into your institution, it's important to make sure the right resources are in place to support and manage your devices and content. This includes planning for the following topics:

- Infrastructure
- Apple ID and iCloud
- Configuration and management
- Purchasing and distributing apps and books

**Deployment scenarios.** There are many ways to set up and use iPad in an educational environment. This section outlines some of the most commonly used deployment models.

**Support options.** Apple offers several methods for supporting iPad. Learn about options that are available, and determine what will work best for your institution.

## Preparing to Deploy

There are many components to a successful iPad deployment. The first step is to evaluate your existing infrastructure, and understand the capabilities and programs Apple offers to help make your deployment a success.

### Infrastructure

Take full advantage of the capabilities iOS 7 offers by making sure your network infrastructure can support them.

#### Wi-Fi and networking

As you plan to deploy iOS devices within your institution, you will need to make sure that your Wi-Fi network and supporting infrastructure are robust and up to date. Consistent and dependable access to a strong network is critical to setting up and configuring iOS devices. In addition, being able to support multiple devices with simultaneous connections from all of your students and teachers is important to the success of your overall program.

iOS devices and your users must have access to your wireless network and Internet services for setup and configuration. You may need to configure your web proxy or firewall ports if devices are unable to access Apple's activation servers, iCloud, or iTunes Store.

You should also make sure that your network infrastructure is set up to work correctly with Bonjour, Apple's standards-based, zero-configuration network protocol. Bonjour enables devices to find services on a network automatically. iOS devices like iPad use Bonjour to connect to AirPrint-compatible printers and AirPlay-compatible devices such as Apple TV. Some apps also utilize Bonjour to discover other devices for collaboration and sharing.

For more information on Wi-Fi and networking for education deployments, including ports for configuration, refer to the *iOS Deployment Technical Reference*. Appendix A, "Wi-Fi Infrastructure" explains the wireless technologies and standards used by iOS devices, and provides information on designing wireless networks for academic use.

Download the iOS Deployment Technical Reference at [http://images.apple.com/ipad/business/docs/iOS\\_Deployment\\_Technical\\_Reference\\_EN\\_Feb14.pdf](http://images.apple.com/ipad/business/docs/iOS_Deployment_Technical_Reference_EN_Feb14.pdf)

Learn more about Bonjour at [www.apple.com/support/bonjour](http://www.apple.com/support/bonjour)

### **Mobile device management**

Whether your institution offers an iPad for each user, shares devices among multiple users, or relies on student-owned devices, it's essential to manage the devices properly. Mobile device management (MDM) gives institutions the ability to securely enroll devices in an education environment, wirelessly configure and update settings, monitor compliance with your institution policies, deploy apps and books, and remotely wipe or lock managed devices.

There are several MDM solutions available to support different server platforms. Each solution offers different management consoles, features, and pricing. Before choosing a solution, refer to the resources listed below to evaluate which MDM features are most relevant to your organization.

In addition to third-party MDM solutions, Apple also offers an MDM solution called Profile Manager, a feature of OS X Server. Profile Manager makes it easy to configure iOS devices so they're set up to your organization's specifications. Profile Manager provides three components: a web-based administration tool, a self-service user portal for enrolling devices and downloading configuration profiles, and a mobile device management server.

Learn more about mobile device management (MDM) at [www.apple.com/education/it/mdm](http://www.apple.com/education/it/mdm)

Learn more about Profile Manager at [help.apple.com/profilemanager/mac](http://help.apple.com/profilemanager/mac)

### **Caching Server**

Caching Server is an integrated feature of OS X Server. It saves previously requested content on your institution's local network, like software updates, documents, apps, and books. This helps minimize the amount of bandwidth needed to download content. Caching Server speeds up the download and delivery of software through the App Store, Mac App Store, iTunes Store, and iBooks Store. It can also cache software updates for faster downloading to iOS devices.

Learn more about Caching Server at [www.apple.com/osx/server/features](http://www.apple.com/osx/server/features)

## Apple ID and iCloud

After you've prepared your infrastructure, you'll want to understand the process for creating an Apple ID so you can inform your users about how they can setup an Apple ID of their own. An Apple ID is required to access key services from Apple.

### Apple ID

An Apple ID is an identity used to log in to Apple services such as the iTunes Store, the App Store, the iBooks Store, and iCloud. These services give students access to a wide range of content to support creativity, collaboration, productivity, and learning.

For one-to-one and student-owned device deployments, each user should have his or her own Apple ID. In a shared-use deployment, an institution-owned Apple ID can be used to deploy content on multiple devices via Apple Configurator.

With an Apple ID, each student can install apps, books, and textbooks provided by the institution; take notes in iBooks that can be accessed between iOS devices; and enroll in iTunes U courses.

Learn how to sign up for an Apple ID at [appleid.apple.com](http://appleid.apple.com)

### Apple ID for students under 13

The Apple ID for Students Program is designed for students under the age of 13. Apple IDs are requested by the school or school district, and created by Apple upon receipt of verifiable consent from a parent or guardian. A signed Parent Privacy Disclosure and consent form is required. This method complies with the Children's Online Privacy Protection Act (COPPA). Apple IDs for students under 13 have a privacy feature called *Limit Ad Tracking* turned on to ensure the student does not receive targeted advertising from Apple, and by default, iCloud email is not activated.

Learn more about Apple ID for students under 13 at [www.apple.com/education/it/appleid](http://www.apple.com/education/it/appleid)

### iCloud

iCloud lets users store personal content such as contacts, calendars, documents, and photos, and keep them up to date among multiple devices.\* Users can also share documents and projects with other iCloud users, anywhere, anytime. iOS devices use iCloud to automatically backup app data, photos and settings and iCloud offers the ability to locate lost or stolen devices using a feature called Find my iPhone.

Some services such as Photo Stream, iCloud Keychain, Documents in the Cloud, and Backup can be disabled through the use of restrictions either entered manually on the device or set via configuration profiles.

**Note:** iCloud is not available in all areas, and iCloud features may vary by area.

Learn more about iCloud at [www.apple.com/icloud](http://www.apple.com/icloud)

## Configuration and Management

Before you deploy, you'll want to understand the process of configuring and managing iOS devices. IT teams and teachers can configure devices for use in a classroom using configuration profiles or over-the-air using mobile device management (MDM). Additional configuration options are available when a device is supervised.

### Setup Assistant

Out of the box, iOS provides Setup Assistant to activate the device, configure basic settings, and personalize preferences such as language, location services, Siri, iCloud, and Find My iPhone. Users can take iPad right out of the box and use these features to get up and running, or your institution can perform these basic setup tasks.

### Configuration profiles

A configuration profile is an XML file that allows you to distribute configuration information to an iOS device. Configuration profiles automate the configuration of settings, accounts, restrictions, and credentials. Configuration profiles can be installed through an email attachment, downloaded from a web page, or installed on devices through Apple Configurator. If you need to configure a large number of devices or just prefer a low-touch over-the-air deployment model, configuration profiles can be delivered through MDM.

### Configuring devices with mobile device management (MDM)

MDM enables schools and other institutions to enroll and manage devices securely, consistently, and easily. With an MDM solution in place, IT teams or teachers can configure and update settings, monitor compliance with organizational policies, and remotely wipe or lock managed devices. MDM also makes it easy to distribute, manage, and configure apps purchased through the Volume Purchase Program (VPP).

Users enroll the device with an MDM server using an enrollment configuration profile or URL. This can be done directly by individual users, or automated for institutionally-owned devices via the Device Enrollment Program (see below for details).

### Supervised devices

To enable additional configuration options and restrictions, you may choose to supervise iOS devices owned by your institution. For example, supervision lets you disallow modification of account settings, or filter web connections via Global Proxy to make sure users' web traffic stays within the institution's network.

By default, all iOS devices are non-supervised. You can combine supervision with remote management via MDM to manage additional settings and restrictions. To enable supervision of your organization's devices, use Apple's Device Enrollment Program or Apple Configurator. You can only supervise devices owned by your institution.

### Device Enrollment Program

The Device Enrollment Program provides a fast, streamlined way to deploy institutionally owned iOS devices that are purchased directly from Apple. The Device Enrollment Program simplifies initial setup by automating MDM enrollment and supervision of devices enabling you to manage the devices without touching them.

Learn more about the Device Enrollment Program at [www.apple.com/education/it/dep](http://www.apple.com/education/it/dep)

### Apple Configurator

Apple Configurator is a free application for OS X available from the Mac App Store. It enables administrators to conveniently set up and configure multiple iOS devices at a time via USB before they are provided to users. With this tool, your institution can quickly configure and update multiple devices to the latest version of iOS, configure device settings and restrictions, and install apps and content.

Apple Configurator is ideal for scenarios where users share iOS devices that need to be quickly refreshed and kept up to date with the correct settings, policies, apps, and data.

Learn more about Apple Configurator at [help.apple.com/configurator/mac/1.4/#](http://help.apple.com/configurator/mac/1.4/#)

## Purchasing and Distributing Apps and Books

There are several ways to purchase and deliver apps and books to your users. The most scalable method is to purchase apps and books through the Volume Purchase Program and assign them to users with MDM. If you are sharing devices among multiple users, you can install apps and content locally with Apple Configurator.

### Volume Purchase Program

The Volume Purchase Program (VPP) gives educational institutions a simple way to purchase iOS apps and books in volume and distribute them to students, teachers, administrators, and employees.

The program also enables app developers to offer a 50 percent discount on purchases of 20 apps or more to eligible institutions, including any K–12 institution or district, or any accredited, degree-granting higher education institution.

MDM solutions can be integrated with VPP, enabling your institution to purchase apps and books in volume and automatically assign them to specific users or groups. When a user no longer needs an app, you can use MDM to revoke and reassign it to a different user. Each app is available for download on all of the user's devices, with no additional effort or cost to your institution. And Caching Server can be used to speed the delivery of apps and books purchased through VPP over your local network.

Redemption codes can also be purchased through VPP for use with Apple Configurator.

Learn more about the Volume Purchase Program at

[www.apple.com/education/it/vpp](http://www.apple.com/education/it/vpp)

### Installing content with Apple Configurator

Apple Configurator simplifies basic setup and configuration tasks—but it can also be used to install apps and other content on iOS devices. Apple Configurator is most helpful when it's used to supervise devices that won't be personalized by the user, such as shared iPad devices in a classroom.

When you configure devices with Apple Configurator, you can install paid apps purchased through VPP using redemption codes. You can also install free apps.

In addition to apps, you can use Apple Configurator to install documents so they're available when your users start using the devices. Documents are available for apps that support iTunes file sharing. You can also review or retrieve documents from iOS devices by connecting them to a Mac running Apple Configurator.

## Deployment Scenarios

There are three common deployment scenarios for iOS devices in education: one-to-one, shared-use, and student-owned. While most institutions have a preferred model, you may encounter multiple scenarios within your institution.

While the responsibilities and steps involved may vary depending on the model, all deployments generally follow four phases:

- Setup and preparation
- Configuration and management
- Distribution of apps and content
- Ongoing management

To help you plan your deployment, we've outlined these phases in detail for each deployment scenario.

### **One-to-One Deployment**

A one-to-one deployment provides the greatest opportunity for iOS devices to positively impact the learning process.

In a typical one-to-one program, the institution purchases devices for all students and instructors who will use iOS devices. This could be within a particular grade level, a department, or an entire school district, college, or university.

In this scenario, each user is assigned a device that is configured and managed by the institution. A mobile device management (MDM) solution can significantly simplify and automate this process. If the devices are purchased directly from Apple, institutions can take advantage of the Device Enrollment Program to automate enrollment in MDM so that devices can be handed to users directly. If students are under the age of 13, institutions can initiate the creation of an Apple ID on their behalf by using the Apple ID for Students program.

Once devices are distributed, users go through a streamlined Setup Assistant, are automatically enrolled in MDM, and can further personalize their device or download their own content. Users may also receive an invitation for specific educational content such as apps and books purchased through VPP, or iTunes U courses. The institution can easily deliver or update these resources over-the-air anytime during the school year, and with Caching Server most of these downloads can come from the institution's local network. If devices are supervised, apps are installed automatically without any user interaction required.

**Scenario: One-to-one deployment****Setup and preparation****Administrator**

- Unbox and asset tag the device.
- Initiate creation of Apple ID for students under the age of 13.

**User**

- Create Apple ID, iTunes Store, and iCloud accounts, if applicable.

**Configuration and management****Administrator**

- Assign devices in Device Enrollment Program for supervision and streamlined enrollment in MDM.
- Configure and supervise device with Apple Configurator (alternative to the above).
- Configure and install accounts, settings, and restrictions wirelessly via MDM.

**User**

- User is provided a device.
- Personalize device with iOS Setup Assistant and enter personal Apple ID.
- Enter school credentials in Setup Assistant for Device Enrollment Program (optional).
- Device settings and configurations are automatically received from MDM.

**Distribution of apps and content****Administrator**

- Send VPP invitation to users.
- Purchase apps and books via VPP and assign them to users via MDM.
- Caching Server speeds the delivery of content over the local network.

**User**

- Accept invitation to VPP.
- User downloads and installs apps and books assigned by the institution.
- If device is supervised, apps are installed automatically.

**Ongoing management****Administrator**

- Revoke and reassign apps to other users as needed with MDM.
- With MDM, administrator can query managed devices to monitor compliance, or trigger alerts if users add certain apps or content that the institution considers inappropriate.
- MDM can also lock devices or reset device passwords as needed. MDM can remotely wipe any managed accounts or data, or entirely wipe a device, if needed.

**User**

- User can back up device to iTunes or iCloud to save documents and other personal content.
- If devices are lost or stolen, users can locate devices with Find My iPhone.

## Shared-Use Deployment

In a shared-use scenario, iOS devices are purchased for use in a classroom or lab and are shared among students throughout the day. Because the devices are shared, they cannot be personalized, and therefore cannot take full advantage of a personalized learning environment for each student.

Shared-use deployments are more tightly managed than one-to-one deployments since the setup, configuration, and management are performed entirely by the institution's staff. Shared-use deployments also require the institution to take responsibility for installing apps and other content necessary for learning. Apple provides tools such as Apple Configurator to make this process easier.

### Scenario: Shared-use deployment

Setup and preparation	
<b>Administrator</b>	<b>User</b>
<ul style="list-style-type: none"> <li>Unbox and activate devices.</li> <li>Create institutional Apple ID(s) for each instance of Apple Configurator.</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>
Configuration and management	
<b>Administrator</b>	<b>User</b>
<ul style="list-style-type: none"> <li>Configure and supervise devices with Apple Configurator.</li> <li>Enroll devices in MDM (optional).</li> <li>Install accounts, settings, and restrictions via Apple Configurator or MDM.</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>
Distribution of apps and content	
<b>Administrator</b>	<b>User</b>
<ul style="list-style-type: none"> <li>Purchase apps via VPP and deploy them with Apple Configurator using redemption codes.</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>
Ongoing management	
<b>Administrator</b>	<b>User</b>
<ul style="list-style-type: none"> <li>Regularly reset devices to standard configuration using Apple Configurator.</li> <li>With MDM, IT can query managed devices to monitor compliance, or trigger alerts if users add certain apps or content that the institution considers inappropriate.</li> <li>MDM can also lock devices or reset device passwords as needed. MDM can remotely wipe any managed accounts or data, or entirely wipe a device, if needed.</li> <li>If a device is lost, stolen, or needs to be replaced, IT can configure a new device from a backup using Apple Configurator.</li> <li>Regular backup of the Mac running Apple Configurator is necessary since VPP purchases are managed locally.</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>



## Student-Owned Deployment

In higher education environments, it's common for students to arrive on campus with their own iOS device.

In this scenario, devices are initially set up and configured by the student or a parent. To take advantage of institutional services such as Wi-Fi, email, and calendars, or to further configure the device for specific classroom requirements, student-owned devices are commonly enrolled in an MDM system provided by the institution.

This provides a streamlined, over-the-air method that ensures all of the configuration settings, policies, restrictions, apps, and content are deployed automatically and unobtrusively, yet remain under the control of the institution. It is usually an "opt-in" process, so students can remove any content or services no longer needed when they complete a course, graduate, or leave the institution.

### Scenario: Student-owned deployment

Setup and preparation	
Administrator	User
	<ul style="list-style-type: none"> <li>Unbox and activate device.</li> <li>Create Apple ID, iCloud, and iTunes Store accounts, if applicable.</li> </ul>
Configuration and management	
Administrator	User
<ul style="list-style-type: none"> <li>Enroll devices and configure accounts, settings, and restrictions wirelessly via MDM based on user/group policies defined by the institution.</li> </ul>	<ul style="list-style-type: none"> <li>Personalize device with iOS Setup Assistant and enter personal Apple ID.</li> <li>Enroll in MDM.</li> <li>Device settings and configurations are automatically received from MDM.</li> </ul>
Distribution of apps and content	
Administrator	User
<ul style="list-style-type: none"> <li>Send VPP invitation to users.</li> <li>Purchase apps and books via VPP and assign them to users via MDM.</li> <li>Caching Server speeds the delivery of content over the local network.</li> </ul>	<ul style="list-style-type: none"> <li>Accept invitation to VPP.</li> <li>User downloads and installs apps and books assigned by the institution.</li> </ul>
Ongoing management	
Administrator	User
<ul style="list-style-type: none"> <li>Revoke and reassign apps to other users as needed with MDM.</li> <li>With MDM, IT can query managed devices to monitor compliance, or trigger alerts if users add certain apps or content that the institution considers inappropriate.</li> <li>MDM can also lock devices or reset device passwords as needed. MDM can remove managed accounts or data, or wipe a device entirely, if needed.</li> </ul>	<ul style="list-style-type: none"> <li>User can back up device to iTunes or iCloud to save documents and other personal content.</li> <li>If devices are lost or stolen, users can locate devices with Find My iPhone.</li> <li>When MDM relationship is removed, managed accounts and data are removed, but user's personal data and content are preserved.</li> </ul>

## Support Options

Apple provides a variety of programs and support options for iOS users. Before deploying devices, find out what's available for your institution and plan for any support you will need.

### **AppleCare OS Support**

AppleCare OS Support includes AppleCare Help Desk Support in addition to incident support. This includes support for system components, network configuration, and administration; integration into heterogeneous environments; professional software applications, web applications, and services; and technical issues requiring the use of command-line tools for resolution.

### **AppleCare Help Desk Support**

AppleCare Help Desk Support provides priority access to Apple's senior technical support staff by telephone. It also includes a suite of tools to diagnose and troubleshoot Apple hardware, which can help institutions manage their resources more efficiently, improve response time, and reduce training costs. AppleCare Help Desk Support covers an unlimited number of support incidents for hardware and software diagnosis and troubleshooting and issue isolation for iOS devices.

### **AppleCare for iOS device users**

Every iOS device comes with a one-year limited warranty and complimentary telephone technical support for 90 days after the purchase date. This service coverage can be extended to two years from the original purchase date with AppleCare+ for iPhone, AppleCare+ for iPad, or the AppleCare Protection Plan (APP) for iPod touch. You can call Apple's technical support experts as often as you like with questions. Apple also provides convenient service options when devices need to be repaired. In addition, AppleCare+ for iPhone and AppleCare+ for iPad offer up to two incidents of accidental damage coverage, each subject to a service fee.

### **iOS Direct Service Program**

As a benefit of AppleCare+ and the AppleCare Protection Plan, the iOS Direct Service Program enables your help desk to screen devices for issues without calling AppleCare or visiting an Apple Store. If necessary, your organization can directly order a replacement iPhone, iPad, iPod touch, or in-box accessories.

Learn more about AppleCare programs at [www.apple.com/support/products](http://www.apple.com/support/products)

## Summary

Whether your educational institution deploys iOS devices to a single classroom or across all grade levels, there are many options to easily deploy and manage these devices. Choosing the right strategies for your institution can help transform the education experience for teachers, students, and other users.

Learn more about iOS deployment at  
[www.apple.com/education/it](http://www.apple.com/education/it)

For more detailed technical information about deployment capabilities of iOS 7, see the iOS Deployment Technical Reference at [http://images.apple.com/ipad/business/docs/iOS\\_Deployment\\_Technical\\_Reference\\_EN\\_Feb14.pdf](http://images.apple.com/ipad/business/docs/iOS_Deployment_Technical_Reference_EN_Feb14.pdf)

\*Some features require a Wi-Fi connection. Some features are not available in all countries. Access to some services is limited to 10 devices.

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