

# What's New in Device Configuration, Deployment, and Management

Session 304

Todd Fernandez, Senior Manager, Device Management and Server





2016

# Anatomy of the Sun

The Sun is an incandescent mass of hydrogen, helium, and other heavier elements. While it appears constant and unchanging from our vantage point on Earth, it actually has a dynamic and variable system of twisting magnetic fields that cause solar events.

**The Convection Zone**  
Energy continues to move toward the surface through convection currents of heated and cooled gas in the convection zone.

**The Radiative Zone**  
Energy moves slowly outward—taking more than 170,000 years to radiate through the layer of the Sun known as the radiative zone.

**The Coronal Streamers**  
The outward-flowing plasma of the corona is shaped by magnetic field lines into tapered forms called coronal streamers, which extend millions of miles into space.

Slide 1 of 1

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Slide 1 of 1

Help 3rd Grade 9:41 AM 100%

Assign Open Navigate Lock Log Out Screens Group

All (30) iBooks (15) Safari (9) Pages (3)

Addison Safari	Aiden iBooks	Anthony Display Off	Ava Pages	Avery iBooks	Brayden iBooks
Chloe iBooks	Claire Pages	Elizabeth Safari	Ella iBooks	Gabriel Safari	Gavin Safari
Isabella Safari	Jordan Safari	Julia Safari	Kaelyn Safari	Landon Safari	Liam iBooks
Logan iBooks	Lucas iBooks	Mason iBooks	Mia AirPlay	Natalie Display Off	Noah iBooks
Owen iBooks	Riley iBooks	Savannah iBooks	Sophia iBooks	Tristan Pages	Zoe Display Off

# the Sun

gen, helium, and other heavier elements. g from our vantage point on Earth, it actually sting magnetic fields that cause solar events

**The Corona**  
The ionized elements within the corona glow in the x-ray and extreme ultraviolet wavelengths. NASA instruments can image the Sun's corona at these higher energies since the photosphere is quite dim in these wavelengths.

**Sun's Core**  
Energy is generated by thermonuclear reactions creating extreme temperatures deep within the Sun's core.

**The Chromosphere**  
The relatively thin layer of the Sun called the chromosphere is sculpted by magnetic field lines that restrain the electrically charged solar plasma. Occasionally larger plasma features—called prominences—form and extend far into the very tenuous and hot corona, sometimes ejecting material away from the Sun.

0:00:03

# the Sun

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0:00:03



Apple School

Institution

Activity

Locations

People

**Accounts**

Classes

Roles

Devices

MDM Servers

Device Assignments

Assignment History

Content

Apps and Books

iTunes U

Settings

Search Accounts

Sort by Last Name

12,120 Accounts  
All Accounts at Township Schools

**Addison Smeds**  
Student · Township Elementary School

**Aiden Westover**  
Student · Township Elementary School

**Alex Mieuli**  
Student · Township Elementary School

**Anthony Reiff**  
Student · Township Elementary School

**Aubrey Boehm**  
Student · Township Elementary School

**Ava Meinerth**  
Student · Township Elementary School

**Avery Chong**  
Student · Township Elementary School

**Brayden Anderson**  
Student · Township Elementary School

**Brooklyn Baily**  
Student · Township Elementary School

**Chloe Orlova**  
Student · Township Elementary School

Robyn

**AS**

# Addison Smeds

Student · Township Elementary School

hello  
Create Sign-In

Verification Code

Inspect

Edit

Name  
Addison Smeds

Managed Apple ID  
asmeds@townshipschools.k12.edu

Account Status  
**New Account** (Not Yet Signed In)

Source  
SFTP

Roles / Locations  
Student at Township Elementary School

2017





Enrollment

Distribution

Management

Tools update

# Enrollment

Bob Whiteman, Senior iOS Device Management Engineer

# Enrollment

tvOS

Device Enrollment Program

Security enhancements

Best practices

Apple School Manager

# Enrollment

tvOS

Can now enroll via DEP

Touch-free enrollment

- Power
- Ethernet
- There's no step three

Supervision is no longer the default



# Enrollment

Adding devices to DEP

NEW

Add devices purchased outside of supported channels to DEP

- Devices with iOS 11 or tvOS 11
- Apple Configurator 2.5

Supervised and mandatory MDM

30-day provisional period



# Enrollment

DEP settings

Unsupervised is deprecated

Optional MDM is deprecated



# Enrollment

New DEP skip keys

## iOS

- Keyboard chooser
- Apple Watch migration

## tvOS

- Sign in to TV provider
- Set up with your iOS device





# Enrollment

Security enhancements for MDM

Certificate partial-trust

Untrusted for SSL, trusted for all other uses

Automatic installation: Full trust

Manual installation: Partial trust

MDM enrollment has a gap in the speed bump

MDM and certificate in the same profile



# Enrollment

Security enhancements for MDM

App Transport Security (ATS) will become a requirement in 2018

SCEP server capabilities

- DES no longer supported in iOS 11 or tvOS 11
- Make sure yours advertises its capabilities
- Support AES and SHA-512



# Enrollment

Security enhancements for MDM

NEW

Certificate pinning

Hard revocation checking of pinned certificates

Test before deployment



macOS

# Enrollment

Best practices—Administrators



Shared iPad—Enable diagnostics submission

Shared iPad—User storage quota on APFS

- Upgrade to latest iOS
- Erase and set up again OR
- Delete all users

macOS—Use profiles command line tool for startup profiles

# Enrollment

Best practices—MDM Solutions



Support diagnostics submission command

Support up to 100 byte APNs tokens

Keep MDM enrollment profile lean

Simplify the administrator's job

# Enrollment

## Troubleshooting tips

Get logs using Console or Apple Configurator 2

iOS—Filter by process

- Profiles and certificate installation: profiled
- Restrictions: profiled
- MDM: mdmd, dmd
- Apps: mdmd, dmd, appstored, itunesstored

macOS—Filter by subsystem com.apple.ManagedClient

***Demo***

Adding devices to DEP

Can Aran, Device Management Engineer

# Apple School Manager

Juan Pinzón



# Apple School Manager

Streamlined user interface

Improved search, filtering, and navigation

Activity view to track background actions

Create up to five Administrator accounts

Support for PowerSchool SIS integration



***Demo***

Apple School Manager

# Apple School Manager

Streamlined user interface

Improved search, filtering, and navigation

Activity view to track background actions

Create up to five Administrator accounts

Support for PowerSchool SIS integration

Volume Purchase Program integration

Coming Soon








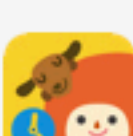






school.apple.com

Grant Phelps ▾ | ?

Search content by name, keyword, ISBN, or URL

Options ▾ 2,100 Total

	<b>Drawminal by Yatotay</b> Lucas Zanotto · iPad ★★★★☆ \$3.99 · \$1.99 (20+)	0 In-Use 170 Available
	<b>Explain Everything Interactive</b> Hit Point · iPad ★★★★☆ FREE	500 In-Use 0 Available
	<b>Seesaw: The Learning Journal</b> Seesaw Learning Company · iPad ★★★★☆ \$11.99 · \$5.99 (20+)	67 In-Use 3 Available
	<b>Sentence Maker</b> Innovative Investments LLC. · iPad ★★★★☆ FREE	67 In-Use 3 Available
	<b>Sesame Street Art Maker</b> Lucas Zanotto · iOS ★★★★☆ \$1.99 · \$3.99 (20+)	12 In-Use 0 Available
	<b>Starting Shakespeare</b> Deeper Richer · iPad ★★★★☆ \$7.99 · \$3.99 (20+)	12 In-Use 0 Available
	<b>The Interaction of Color</b> Yale · iPad ★★★★☆ FREE	84 In-Use 12 Available
	<b>Todo Telling Time</b> Enuma, Incs. · iPad ★★★★☆ FREE	250 In-Use 31 Available
	<b>Seesaw: The Learning Journal</b> Seesaw Learning Company · iPad ★★★★☆ \$11.99 · \$5.99 (20+)	0 In-Use 50 Available
	<b>Sentence Maker</b> Innovative Investments LLC. · iOS ★★★★☆ FREE	87 In-Use 1 Available
	<b>Explain Everything Interactive</b>	250 In-Use



# 1,950 Apps · 150 Books

Bullis Charter School

Apple School

Institution

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MDM Servers

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Content

**Apps and Books**

iTunes U

---





Settings


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Art

Options ▾ 4 Total

	<b>Starting Shakespeare</b> Deeper Richer · iPad ★★★★☆ \$7.99 · \$3.99 (20+)	160 In-Use 10 Available
	<b>The Interaction of Color</b> Yale · iPad ★★★★☆ FREE	500 In-Use 0 Available
	<b>Edit Lab - Double Exposure</b> Mark Apps, LLC · iOS ★★★★☆ \$3.99 · \$1.99 (20+)	
	<b>Art an Art Authority</b> Charles H. Whitaker · iBook ★★★★☆ \$12.99	



## Art and Art Authority

Charles H. Whitaker · iBook

[View Details ↗](#)

### Buy Licenses

Quantity	Location
<input type="text" value="50"/>	<input type="text" value="Covington"/>
Price	Total
\$12.99	\$649.50
	Store Credit: \$2,500.00

[Buy](#)

# Distribution

# Distribution

VPP in Apple School Manager

tvOS

# Distribution

VPP in Apple School Manager

NEW

Integrated, updated UI

Easier management of purchases

License transfer between locations





“I want to centralize my purchases in one place.”

Johnny Appleseed

# Distribution

VPP in Apple School Manager—Purchases associated with location

Content Managers buy for location

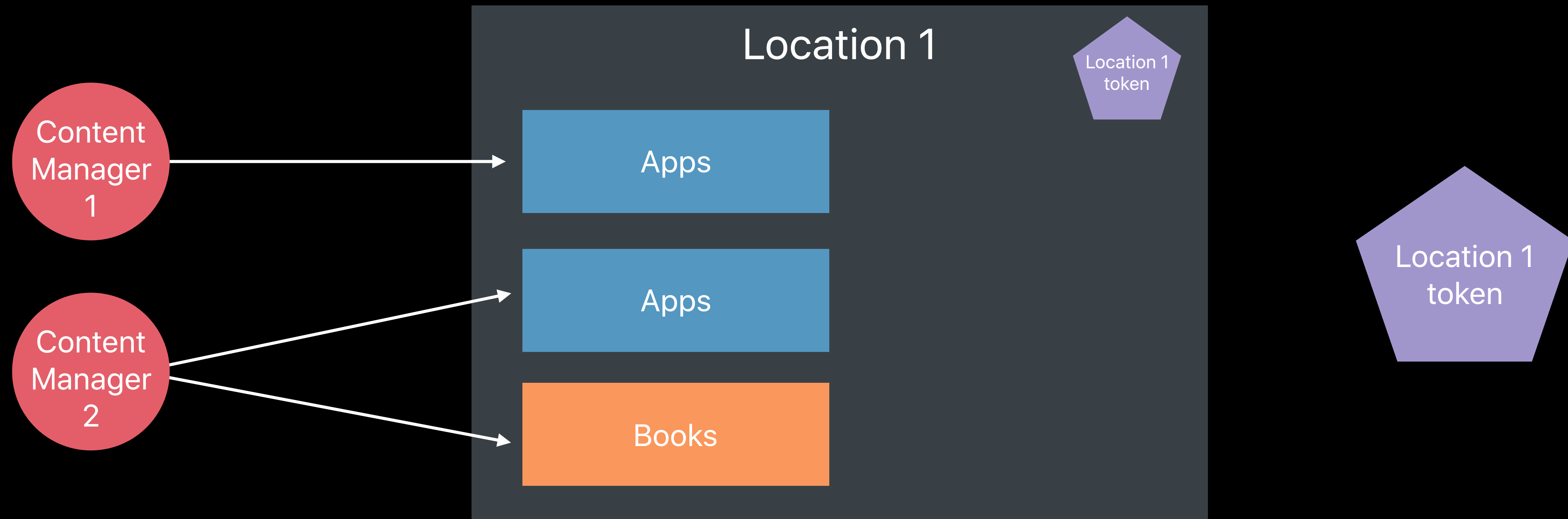
Single token needed for each location

Content Managers manage all licenses at location



# Distribution

VPP in Apple School Manager—Purchases associated with location



“I want to move licenses to a different token.”

Jane Appleseed

# Distribution

VPP in Apple School Manager—Location transfer

Licenses can be transferred between locations

Apple School Manager shows number of available licenses

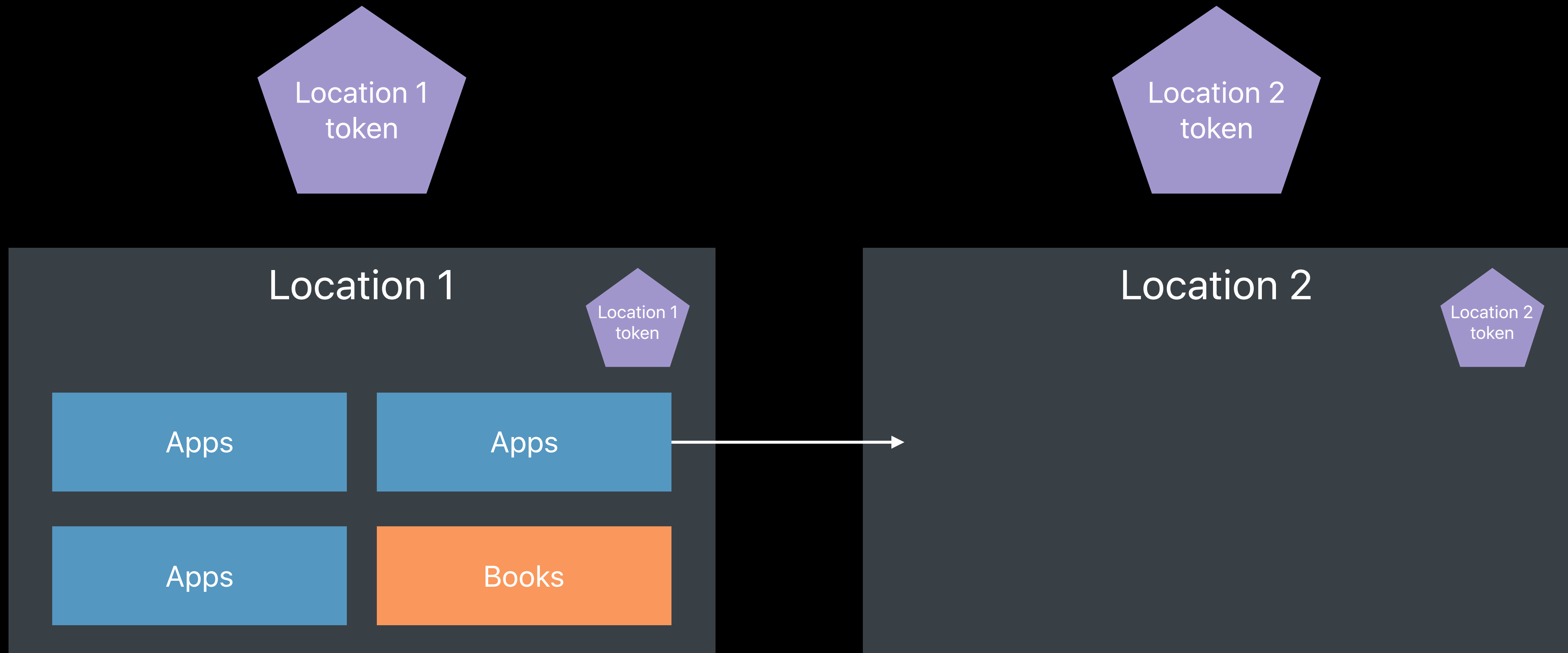
Available licenses can be transferred

Assigned licenses cannot be transferred



# Distribution

VPP in Apple School Manager—Location transfer



school.apple.com

Grant Phelps

Art

Options 4 Total

- Starting Shakespeare**  
Deeper Richer · iPad  
160 In-Use  
10 Available  
★★★★☆ \$7.99 · \$3.99 (20+)
- The Interaction of Color**  
Yale · iPad  
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0 Available  
★★★★☆ FREE
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Mark Apps, LLC · iOS  
★★★★☆ \$3.99 · \$1.99 (20+)
- Art an Art Authority**  
Charles H. Whitaker · iBook  
★★★★☆ \$12.99

## Starting Shakespeare

Deeper Richer · iPad App

[View Details](#)

### Buy Licenses

Quantity: 0    Location: Search Locations

Price: \$12.99    Total Cost: \$0.00

#### Transfer Licenses

Quantity: Up to 20

Transfer to: Location

[Cancel](#) [Transfer](#)

### Manage Licenses

Location	In-Use	Available	Action
Covington Elementary	10	2	<a href="#">Transfer</a>
Los Altos High School	20	0	
Los Altos Middle School	80	80	<a href="#">Transfer</a>
Los Altos School District	80	8	<a href="#">Transfer</a>

# Distribution

## VPP in Apple School Manager—Call to action

Expose the location name when a token expires or becomes invalid

- Admins may not know which token needs renewal
- Responses to API calls have been enhanced with more information

Check for duplicate location tokens

- If not, admins may see higher than accurate license count

Be aware that unassigned licenses counts may change outside of MDM

- Licenses may have been transferred between locations in Apple School Manager
- Refresh the license count before displaying



# Distribution

VPP in Apple School Manager—Timing

MDM Protocol Reference documents API changes

Testing support available soon

Release of new VPP features later this summer

Support new customer workflows prior to back-to-school deployment

# Distribution

tvOS

Enterprise apps

Managed app configuration

# Management

Pradhap Natarajan, Profile Manager Engineer

# iOS

## Setup

Require tether for MDM commands

Software updates on

- Passcode locked devices **SUPERVISED**
- Non-DEP devices **SUPERVISED**

Preserve data plan when erasing device **NEW**



# iOS

Lost and Found

SUPERVISED

Lost Mode sound

Location accuracy

System app removal

NEW



# iOS

## Data protection

Join only Wi-Fi networks configured by profiles

- Exempts carrier profiles SUPERVISED NEW

Allow VPN creation SUPERVISED NEW

Exchange and mail—Control S/MIME signing and encryption independently



# iOS

Classroom

SUPERVISED

Unprompted screen observation

Unprompted app and device lock

NEW

Automatic joining of classes

NEW



# iOS

## AirPrint

NEW

Custom port

Require TLS

iBeacon discovery **SUPERVISED**

Credentials storage in Keychain **SUPERVISED**

Require TLS **SUPERVISED**

Allow AirPrint **SUPERVISED**





# iOS

## Networking

DNS proxy extension

SUPERVISED

NEW

Internet Protocol version(s) for cellular connections



# macOS

## Setup

System migration

Smart card configuration

Any 802.1X Ethernet config **NEW**

Software update delay **NEW**

Deferred updates query info **NEW**



# macOS

Firmware password

NEW

Set password

Query password status

Verify password



# macOS

## Account management

NEW

List users

Delete user

Unlock user



# macOS

Data protection

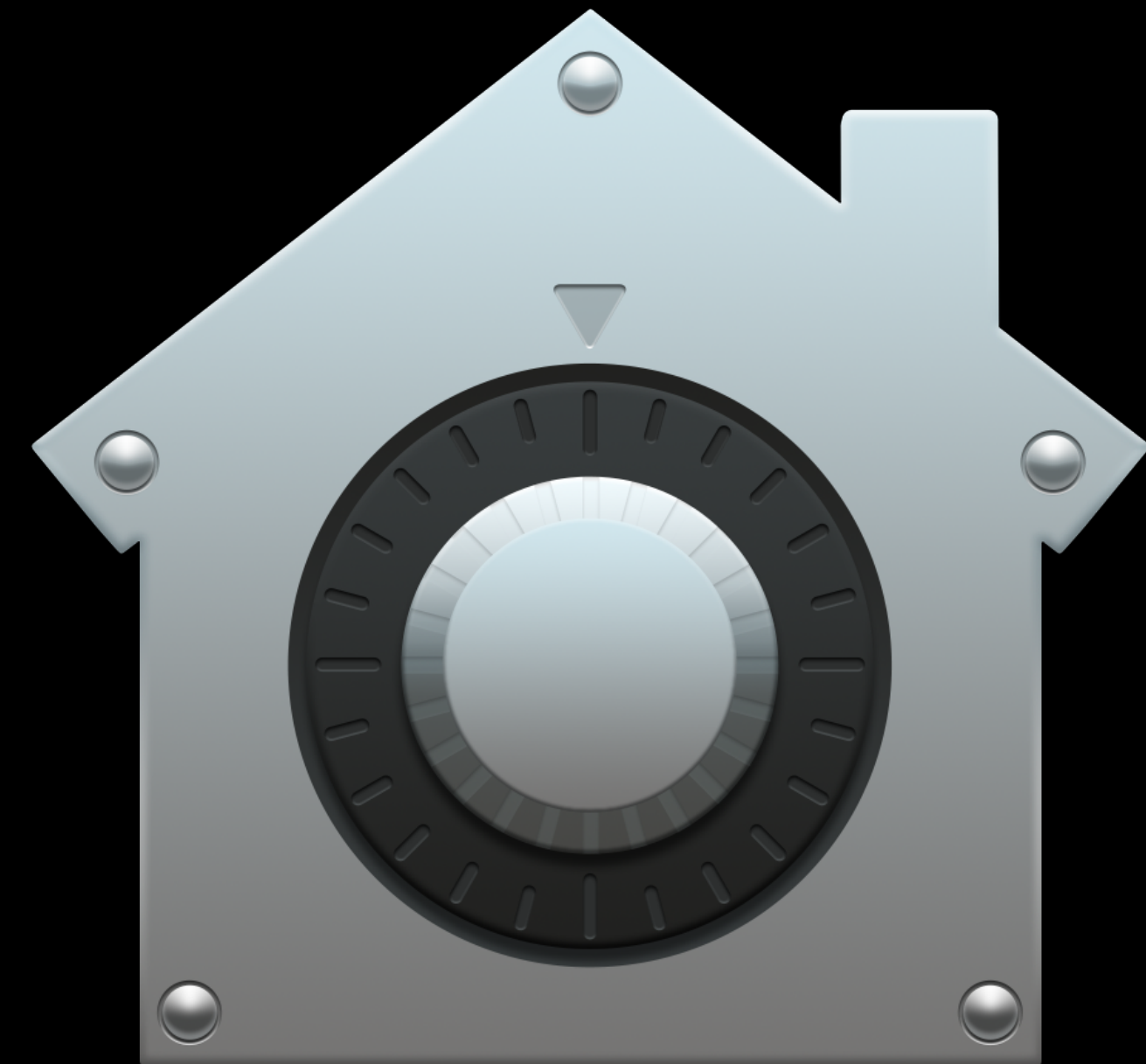
NEW

Extensions management

Query active extensions for a user

Escrow FileVault personal recovery keys

iCloud desktop and documents



# tvOS

Setup

SUPERVISED

Erase device

Set device name

Prevent modifying device name

NEW

Allowed content restrictions

NEW

Show/Hide apps

NEW

Home Screen Layout

NEW



# tvOS

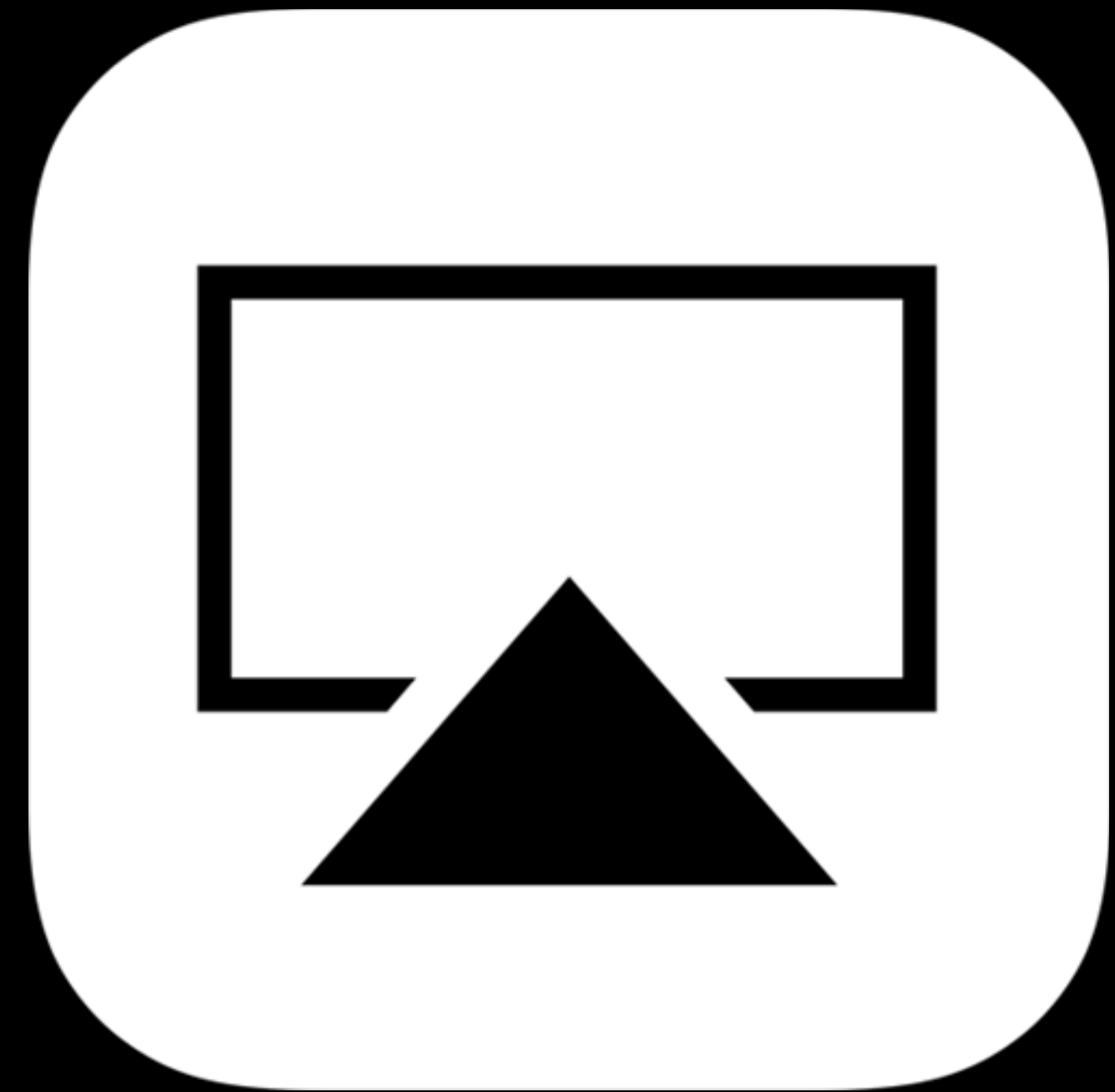
Conference Room

SUPERVISED

Conference Room Display

AirPlay Security

NEW



# tvOS

Kiosks and Dashboard

SUPERVISED

Single App Mode

Allow remote app pairing

Allow AirPlay





# iOS, macOS, tvOS

Shared

VPN IKEv2, Wi-Fi—min/max TLS versions

Installed app list consistent

Restart SUPERVISED

Shut down SUPERVISED



# Assessments

Automatic assessment configuration

Activity continuation

Universal Clipboard

Dictation

Smart punctuation **NEW**

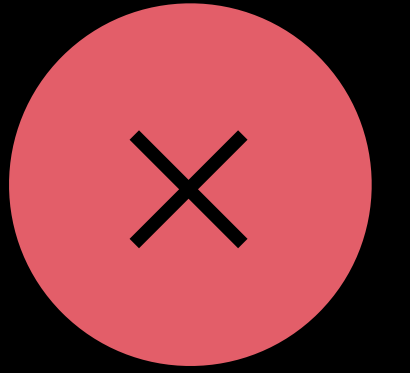
Classroom screen observation **NEW**



# Restrictions

Supervised only

2018



App installation

App removal

FaceTime

Safari

iTunes

Explicit content

iCloud documents and data

Multiplayer gaming

Add GameCenter friends

***Demo***

Managing tvOS

Graham McLuhan, Device Management Engineer

UC SAN DIEGO JACOBS MEDICAL CENTER

# UC San Diego Health







Crestion 9:41 AM MyChart by Epic

Log out

- Home
- Happening soon
  - Around 11 AM Medications
  - At 2:00 PM Sister Visiting
  - At 4:15 PM MRI
- Taking care of me
- My health
- To learn
- MyUCSDChart

Blood Pressure	117/67	Respirations	16
Heart Rate	103		

Sort: Newest to oldest

Anion Gap	5 mmol/L
Bicarbonate	23 mmol/L
BUN	13 mg/dL
Calcium	9.8 mg/dL
Chloride	



# Tools Update



# Tools Update

Apple Configurator 2.5

Profile Manager in Server 5.4

Classroom

Content caching

Roster simulator

# Classroom

## Classroom 2

- Teacher-created classes
- Document transfer between teacher and students
- Mute devices

## Classroom 2.1 NEW

- Managed class behavior for teacher-created classes on supervised devices
- Student activity view



Class Summary

Done

# 3rd Grade

May 15, 2017

### App Usage 13 apps



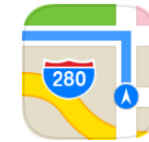
Podcasts  
8 Students



Safari  
12 Students



Notes  
5 Students



Maps  
6 Students



Contacts  
4 Students



Camera  
6 Students



Photo Booth  
4 Students



iBooks  
4 Students

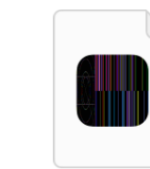


Keynote  
5 Students

### Items Shared 5 items



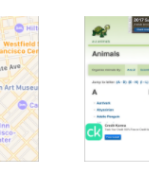
• Hello — El...  
Elizabeth



• The — Ella  
Ella



• San Franc...  
Isabella



• a-z-anim...  
Isabella



• apple.com  
Noah

### Students 27 of 31 students joined



Addison  
2 apps



Aiden  
1 app



Aubrey  
3 apps



Ava  
1 app



Avery  
No apps



Brayden  
3 apps



Brooklyn  
2 apps



Chloe  
4 apps



Claire  
2 apps



Elizabeth  
3 apps



Ella  
4 apps



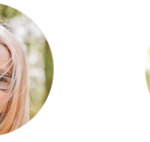
Gabriel  
1 app



Gavin  
3 apps



Isabella  
3 apps



Jordan  
4 apps



Julia  
3 apps



Landon  
4 apps



Liam  
2 apps



Logan  
No apps



Mason  
4 apps



Mia  
2 apps



Noah  
1 app



Owen  
No apps



Riley  
4 apps



Savannah  
2 apps



Tristan  
2 apps



Zoe  
3 apps

Class Summary

Done

# 3rd Grade

May 15, 2017

## App Usage 13 apps



Podcasts  
8 Students



Safari  
12 Students



Notes  
5 Students



Maps  
6 Students



Contacts  
4 Students



Camera  
6 Students



Photo Booth  
4 Students



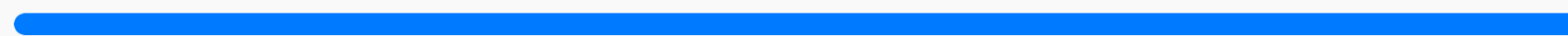
iBooks  
4 Students



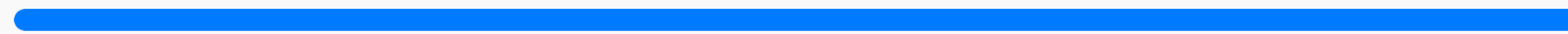
Keynote  
5 Students



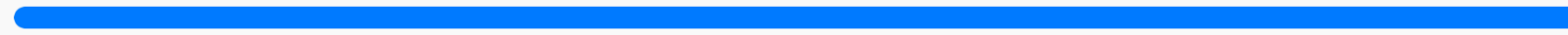
Ava  
6 minutes



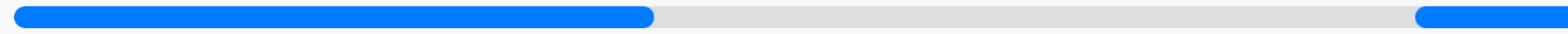
Gabriel  
6 minutes



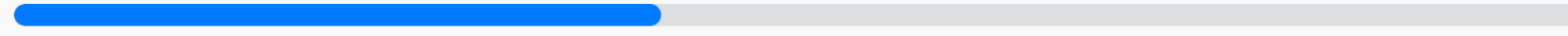
Noah  
6 minutes



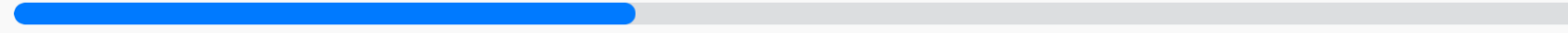
Julia  
3 minutes



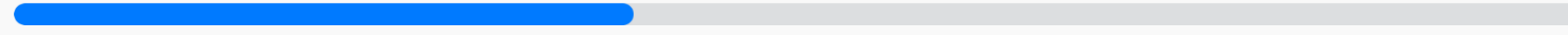
Riley  
3 minutes



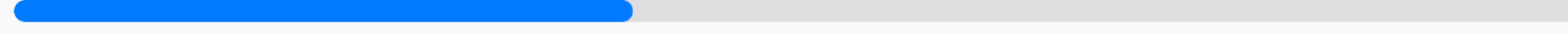
Brooklyn  
2 minutes



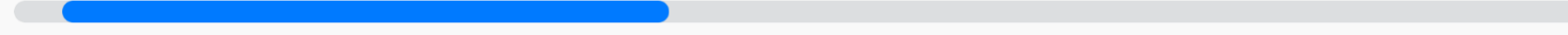
Isabella  
2 minutes



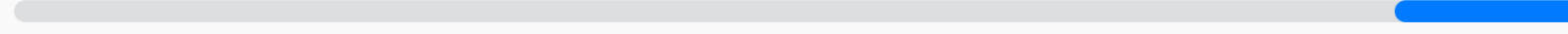
Gavin  
2 minutes



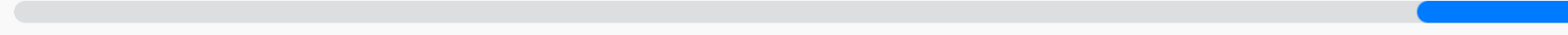
Jordan  
2 minutes



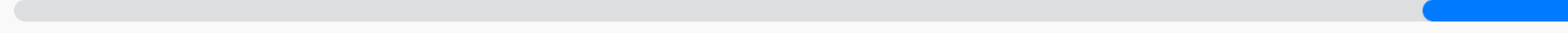
Claire  
44 seconds



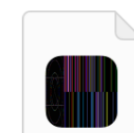
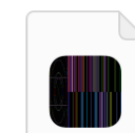
Mia  
39 seconds



Savannah  
38 seconds



## Items Shared 5 items



### Class Summary

Done

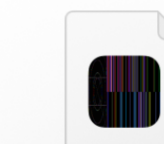
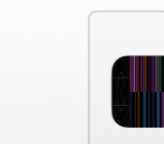
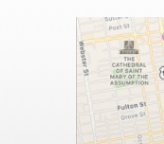
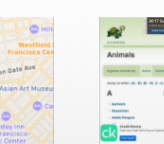

## 3rd Grade

May 15, 2017


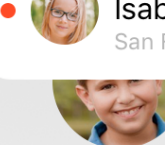
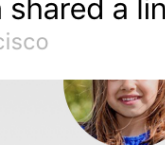




















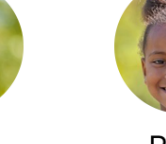
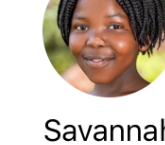
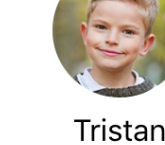

### App Usage 13 apps

								
Contacts 4 Students	Camera 6 Students	Photo Booth 4 Students	iBooks 4 Students	Keynote 5 Students	Clock 1 Student	Calendar 1 Student	Messages 4 Students	News 3 Students

### Items Shared 5 items

				
• Hello — El... Elizabeth	• The — Ella Ella	• San Franc... Isabella	• a-z-anim... Isabella	• apple.com Noah

### Students

							
Addison 2 apps	Aiden 1 app	Aubrey 3 apps	Ava 1 app	Avery No apps	Brayden 3 apps	Brooklyn 2 apps	Chloe 4 apps
							
Claire 2 apps	Elizabeth 3 apps	Ella 4 apps	Gabriel 1 app	Gavin 3 apps	Isabella 3 apps	Jordan 4 apps	Julia 3 apps
							
Landon 4 apps	Liam 2 apps	Logan No apps	Mason 4 apps	Mia 2 apps	Noah 1 app	Owen No apps	Riley 4 apps
							
Savannah 2 apps	Tristan 2 apps	Zoe 3 apps					

**Sharing** Edit

- 4 minutes ago  
Isabella shared a link  
San Francisco

Class Summary

Done

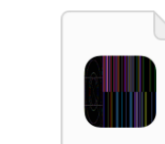
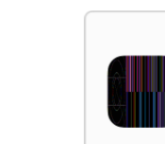
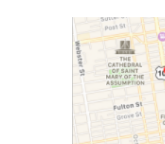
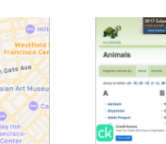

# 3rd Grade

May 15, 2017









### App Usage 13 apps


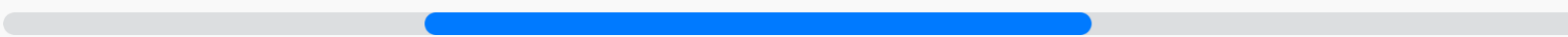

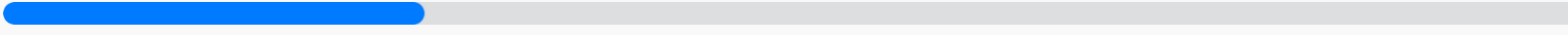

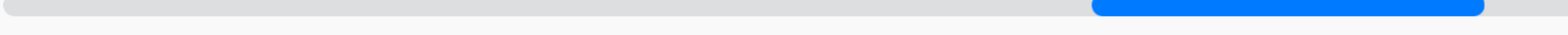

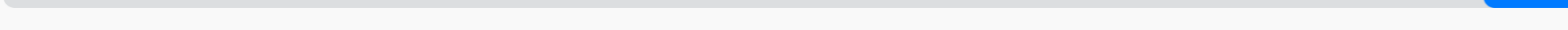
								
Contacts 4 Students	Camera 6 Students	Photo Booth 4 Students	iBooks 4 Students	Keynote 5 Students	Clock 1 Student	Calendar 1 Student	Messages 4 Students	News 3 Students

















### Items Shared 5 items

				
• Hello — El... Elizabeth	• The — Ella Ella	• San Franc... Isabella	• a-z-anim... Isabella	• apple.com Noah

### Students 27 of 31 students joined

							
Addison 2 apps	Aiden 1 app	Aubrey 3 apps	Ava 1 app	Avery No apps	Brayden 3 apps	Brooklyn 2 apps	Chloe 4 apps

	Contacts 3 minutes	
	Podcasts 2 minutes	
	iBooks 2 minutes	
	Messages 23 seconds	

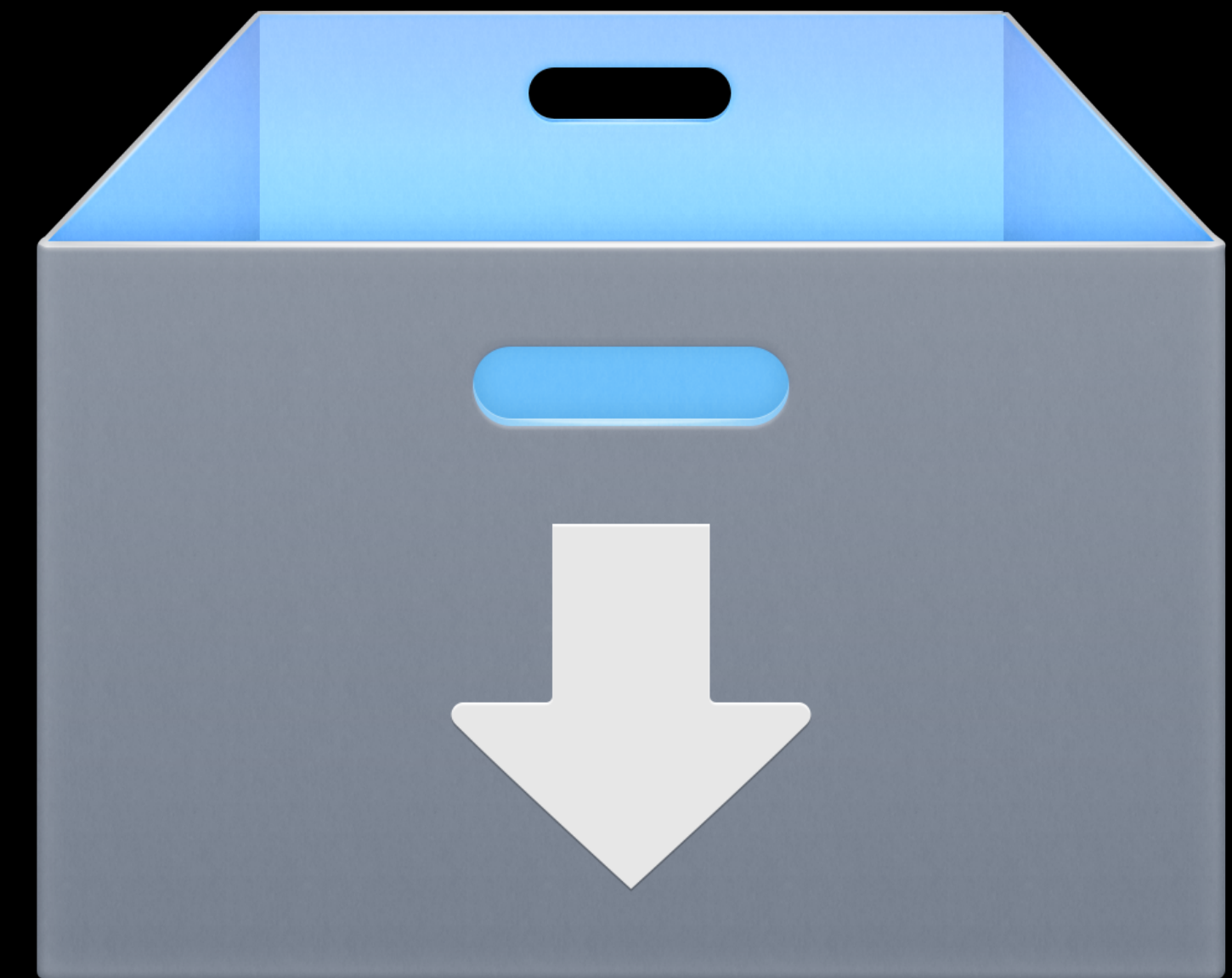
							
Claire 2 apps	Elizabeth 3 apps	Ella 4 apps	Gabriel 1 app	Gavin 3 apps	Isabella 3 apps	Jordan 4 apps	Julia 3 apps
							
Landon 4 apps	Liam 2 apps	Logan No apps	Mason 4 apps	Mia 2 apps	Noah 1 app	Owen No apps	Riley 4 apps

# Content Caching

NEW

Built into macOS

Tethered caching UI



***Demo***

Tethered caching

Nolan Astrein, Device Management Engineer



# Summary

App developers

Managed app configuration

- Now for tvOS apps!

Shared iPad

- Store app data in cloud
- Don't rely on backup or local data

Cisco Fastlane

- Optimize your app's network traffic



# Summary

MDM vendors and administrators

Support new features

Adopt security enhancements

Take advantage of new capabilities to create compelling new use cases

Be ready for restrictions to be supervised only



# More Information

<https://developer.apple.com/wwdc17/304>

# Related Sessions

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**What's New with Screen Recording and Live Broadcast**

Grand Ballroom B

Friday 10:00AM

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iOS Configuration and APIs for Kiosk and Assessment Apps

Grand Ballroom A

Friday 1:50PM

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# Labs

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Device Configuration, Deployment and Management Lab

Technology Lab I

Thurs 3:10PM–5:10PM

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Device Configuration, Deployment and Management Lab

Technology Lab I

Fri 1:00PM–3:00PM

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Networking Lab

Technology Lab J

Fri 1:50PM–3:50PM

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