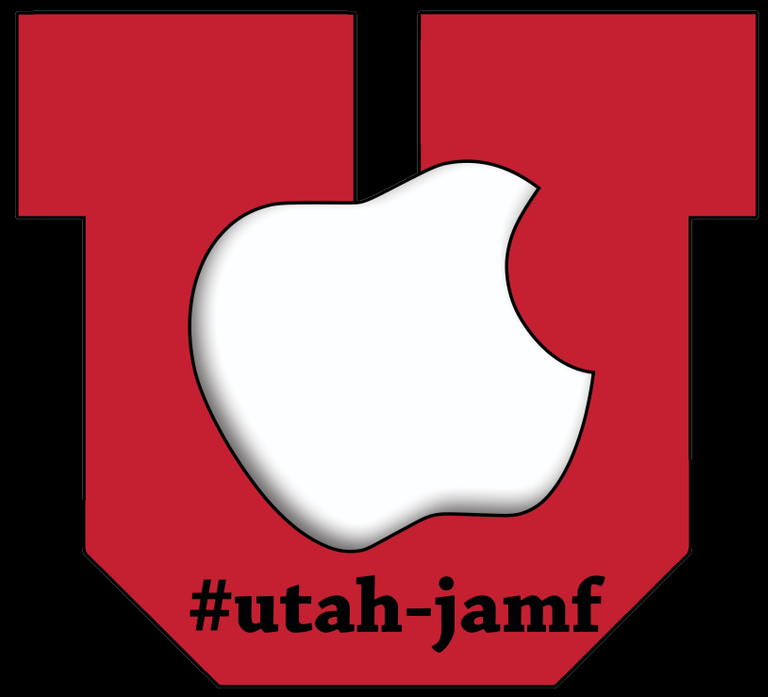
iPad Management

The search for zero touch deployment

Overview

- Apple School Manager
- iPads for Students
- Configuration Options
- iMazing
  - Jamf Pro
  - Configurator
  - UI Script

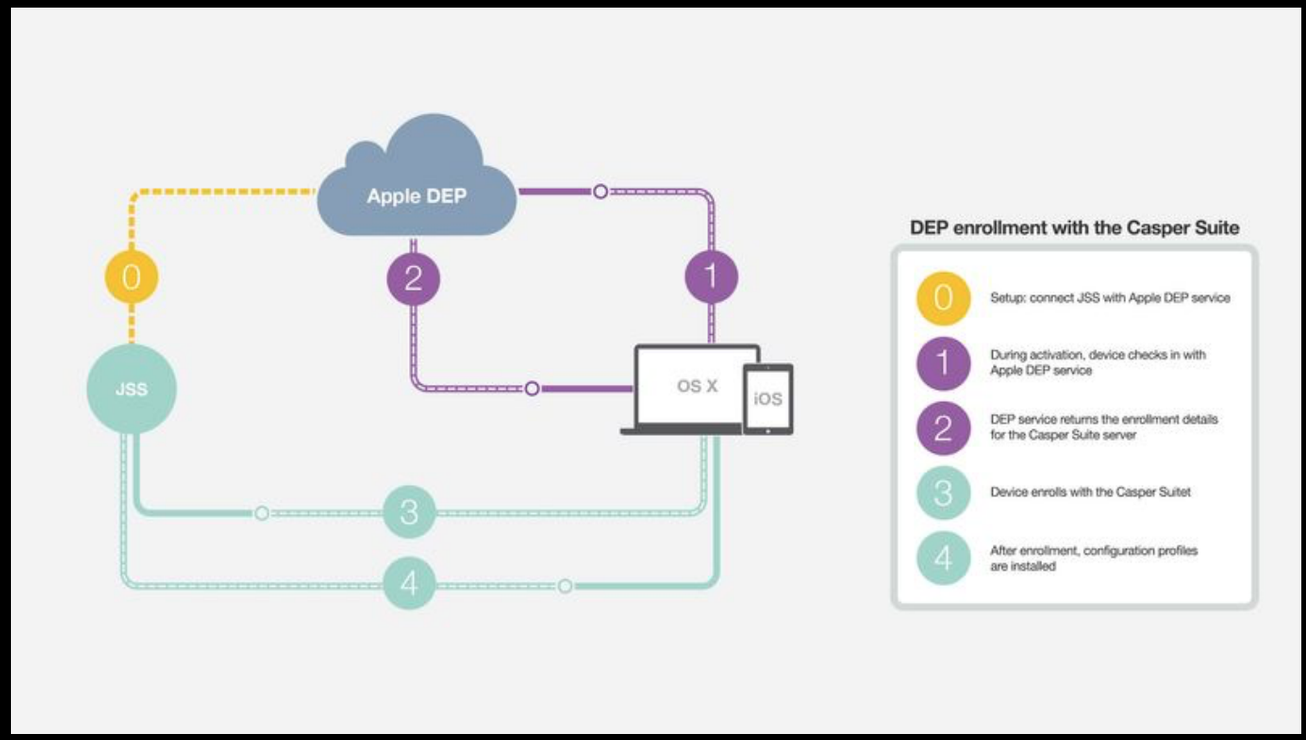


iPads

- Come out in April 2010
- Apple sells more of them then Macs by volume
- Half of Dell’s total sales of all hardware
- 27 iPads Models

Mobile Device Management

- MDM
- Third-party product
- Uses Apple Push Notification Service (APNS) to send commands
- Over-the-air distribution
- Device Enrollment Program



Apple School Manager

- Volume Purchase Program (VPP)
- Buy and manage App Licenses
- Assign Devices to a MDM server for Automated Device Enrollment
- Coordinated with Office of Software Licensing to create an account on ASM

Library iPad History

- Started with 10 iPads
- Internal Management Solution
- High demand for iPad Pros
- Commercial Proof of Concept
- Cares Acts to increase to 100

iPads for Students

iPads for Students

- Ready for Checkout
- Zero to Minimal Touch
- Remove Student Data
- Install Apps from VPP
- Plug it in and forget it
- Scalable

Configuration Options

- Apple Configurator 2
- AEiOS
- Jamf Pro
- Jamf Reset/Setup
- iMazing

Apple Configurator 2

- Pros
  - Single Application
  - Supervises
  - Adds Apps from VPP
- Cons
  - Manual Process
  - Prone to error
  - Not scalable

AEiOS

- Pros
  - Uses Apple Configurator
  - Automated with cfgutil
  - Apply changes to groups of iPads
- Cons
  - Prone to errors from AC
  - Developer left our group
  - Apps sometimes were missing

Jamf Pro

- Pros
  - Automated Device Enrollment
  - True MDM solution
  - Add Apps anytime with VPP
- Cons
  - Apps installed later
  - User interaction
  - Re-enrollment

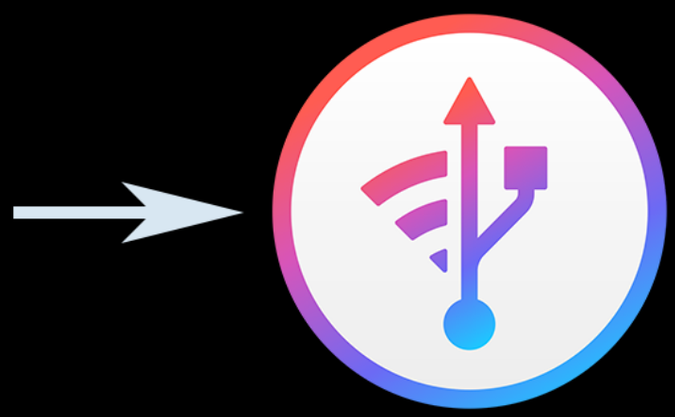
Jamf Reset/Setup

- Pros
  - Uses Jamf Pro
  - Resets the iPad
  - Preset Configurations via App
- Cons
  - Setup Assistant needs to be passed
  - One configuration needed
  - Manual resets

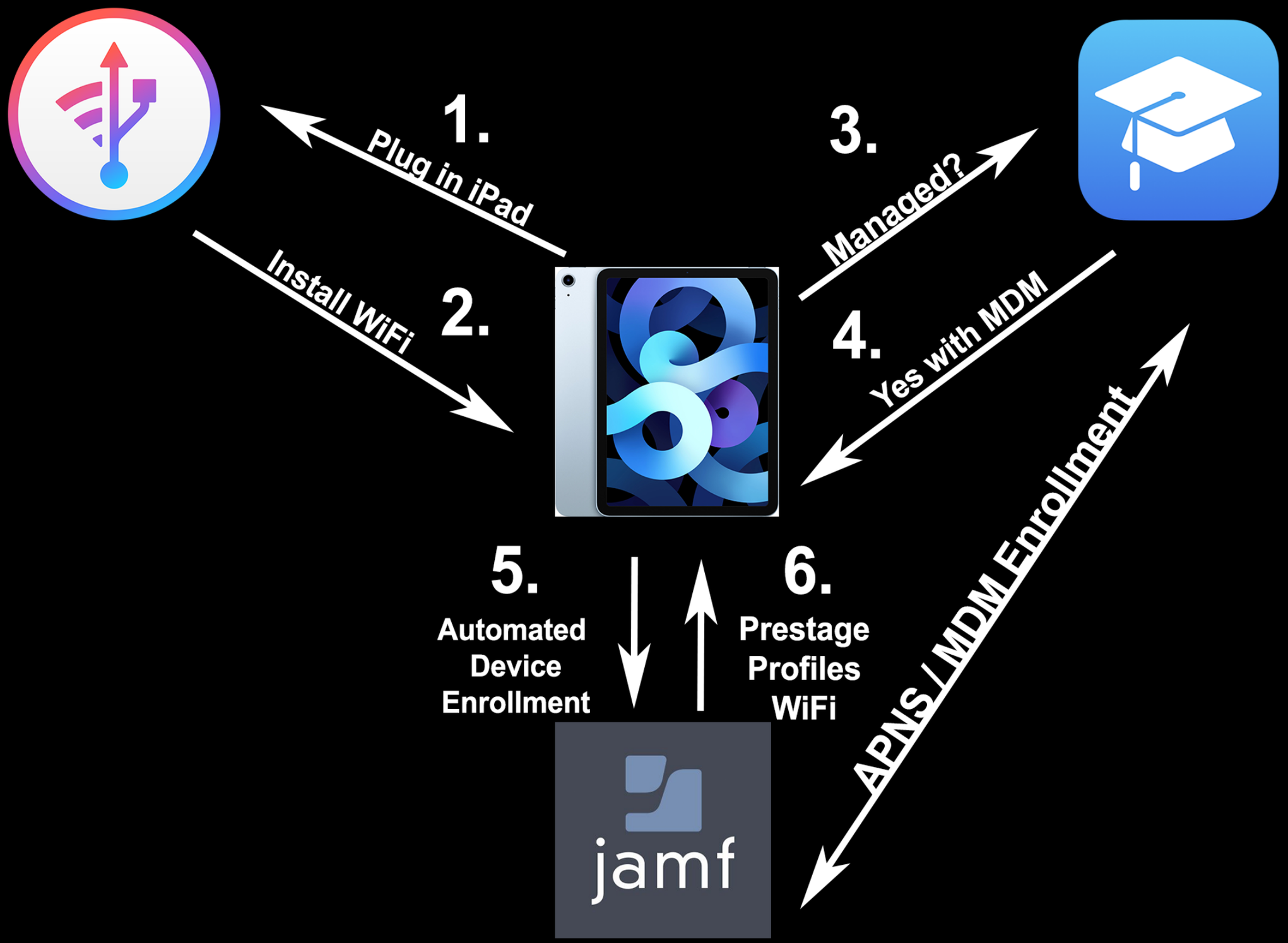
iMazing

- Pros
  - Automated Device Enrollment
  - Blueprints
  - Enterprise App
- Cons
  - Missing some features from AEiOS
  - No Full Automation

New iPad Workflow



iPad Workflow

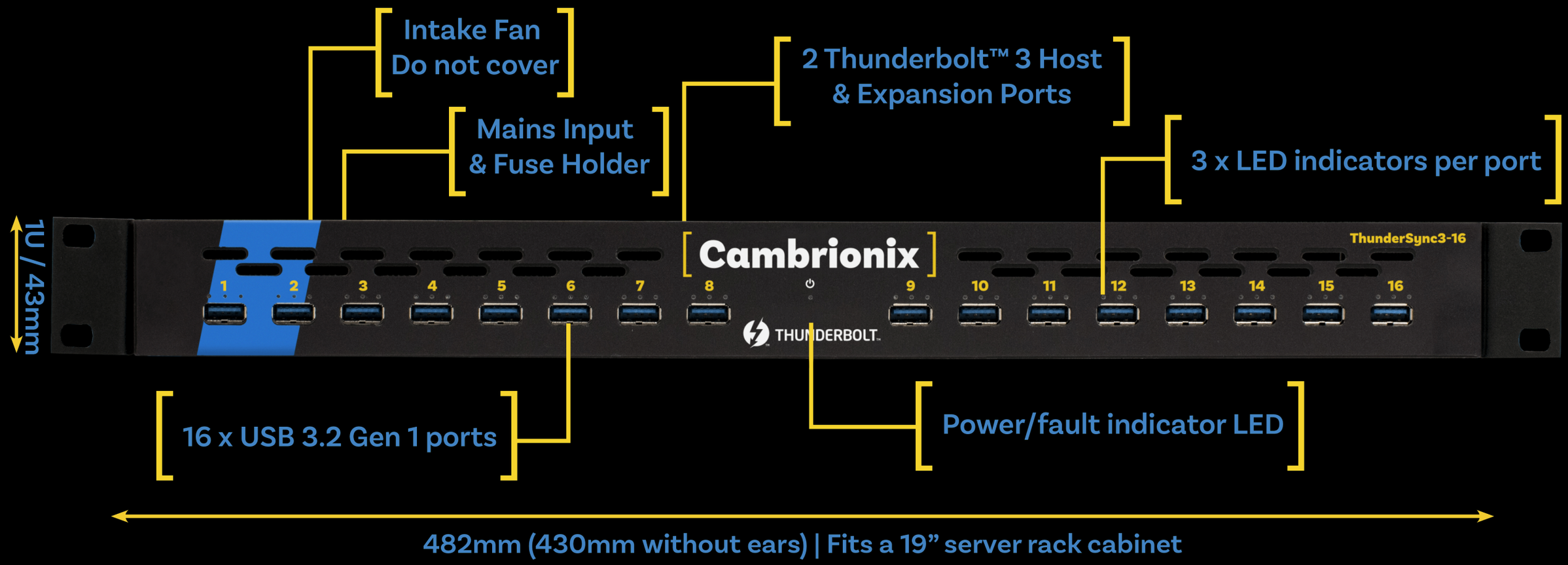


iPad Setup - Hardware

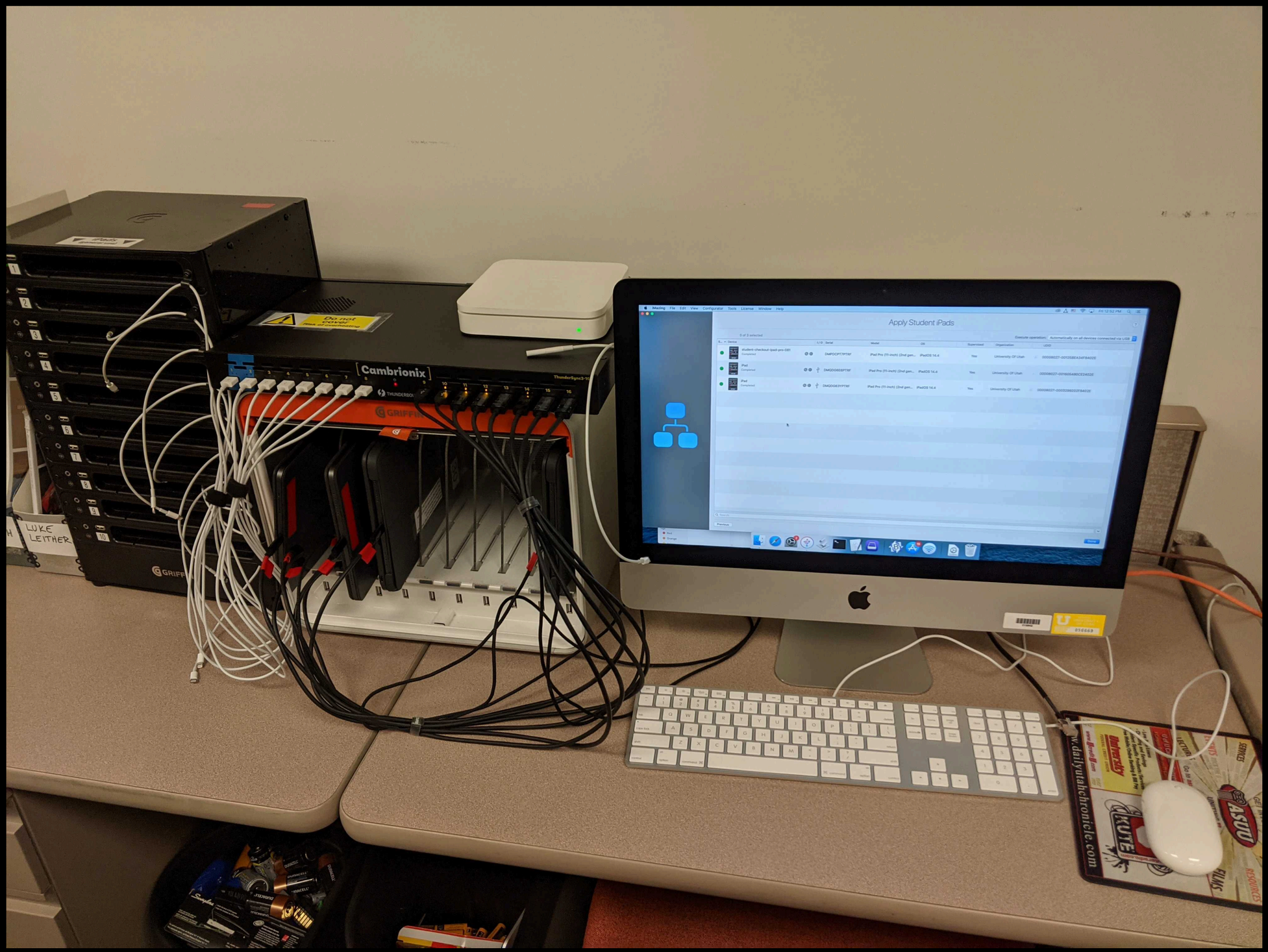
- iPads
- Mac mini or iMac
- USB Hub
- Cambrionix - ThunderSync3-16
  - $1700

Cambrionix
CHARGE • CONNECT • MANAGE

iPad Setup - Hardware



iPad Setup - Hardware

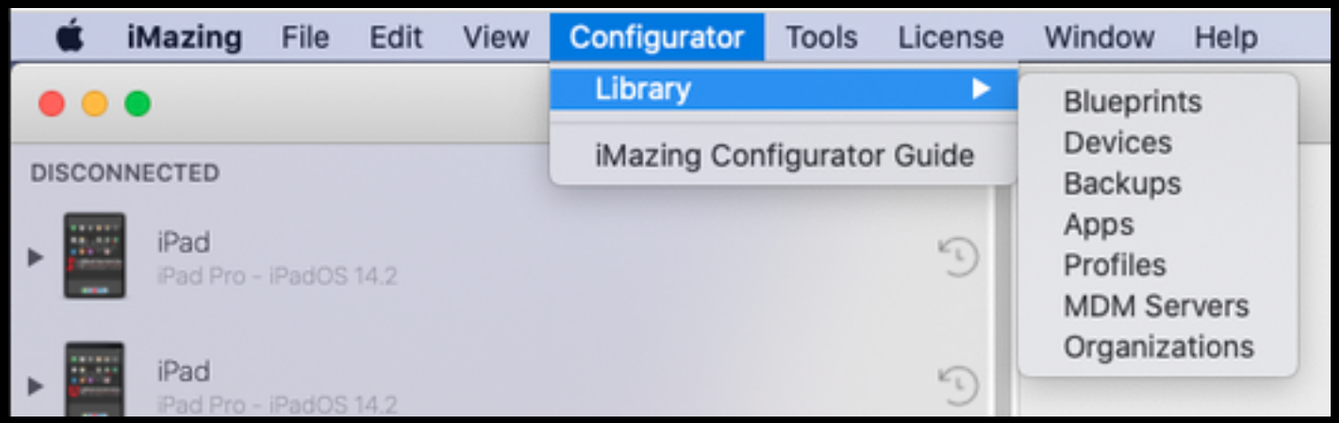


iPad Setup - Software

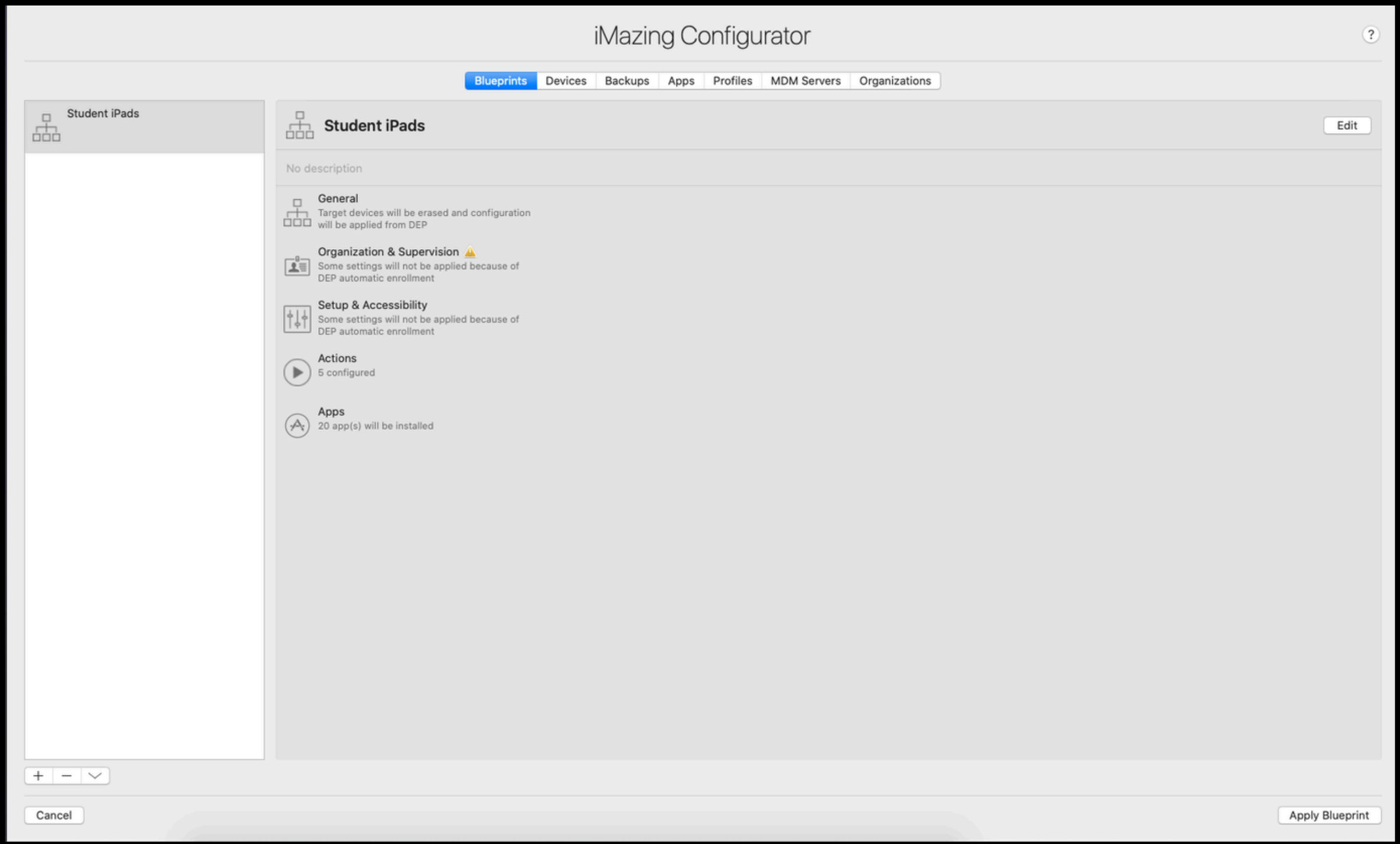
- iMazing
  - Blueprints
- Jamf Pro
  - Prestage Enrollment
  - Configuration Profiles
- Apple Script
  - UI Scripting

iMazing Configurator

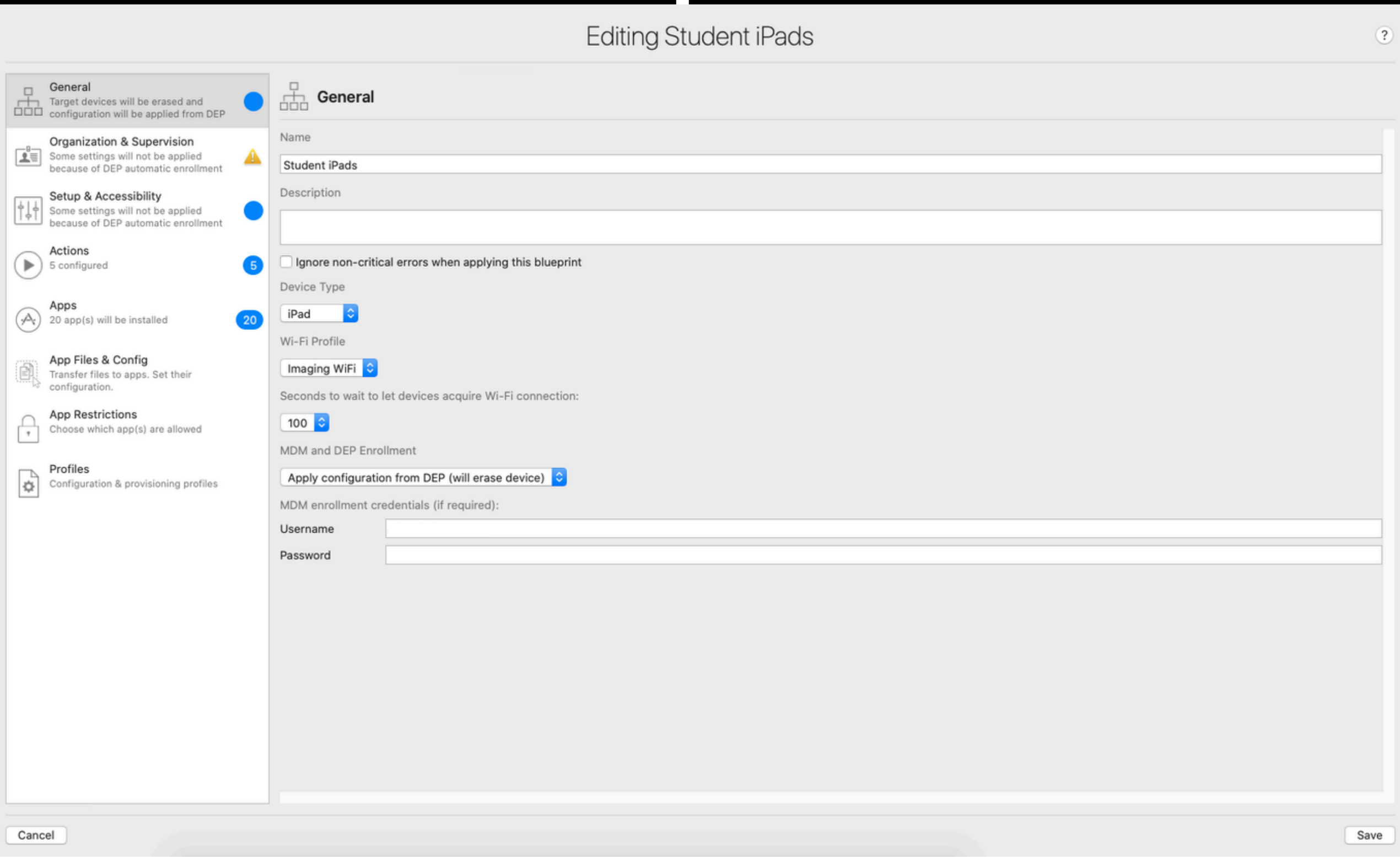
- Blueprints
  - Post / Pre Actions
  - WiFi Install
- App Install
- Supervision
- Software Updates



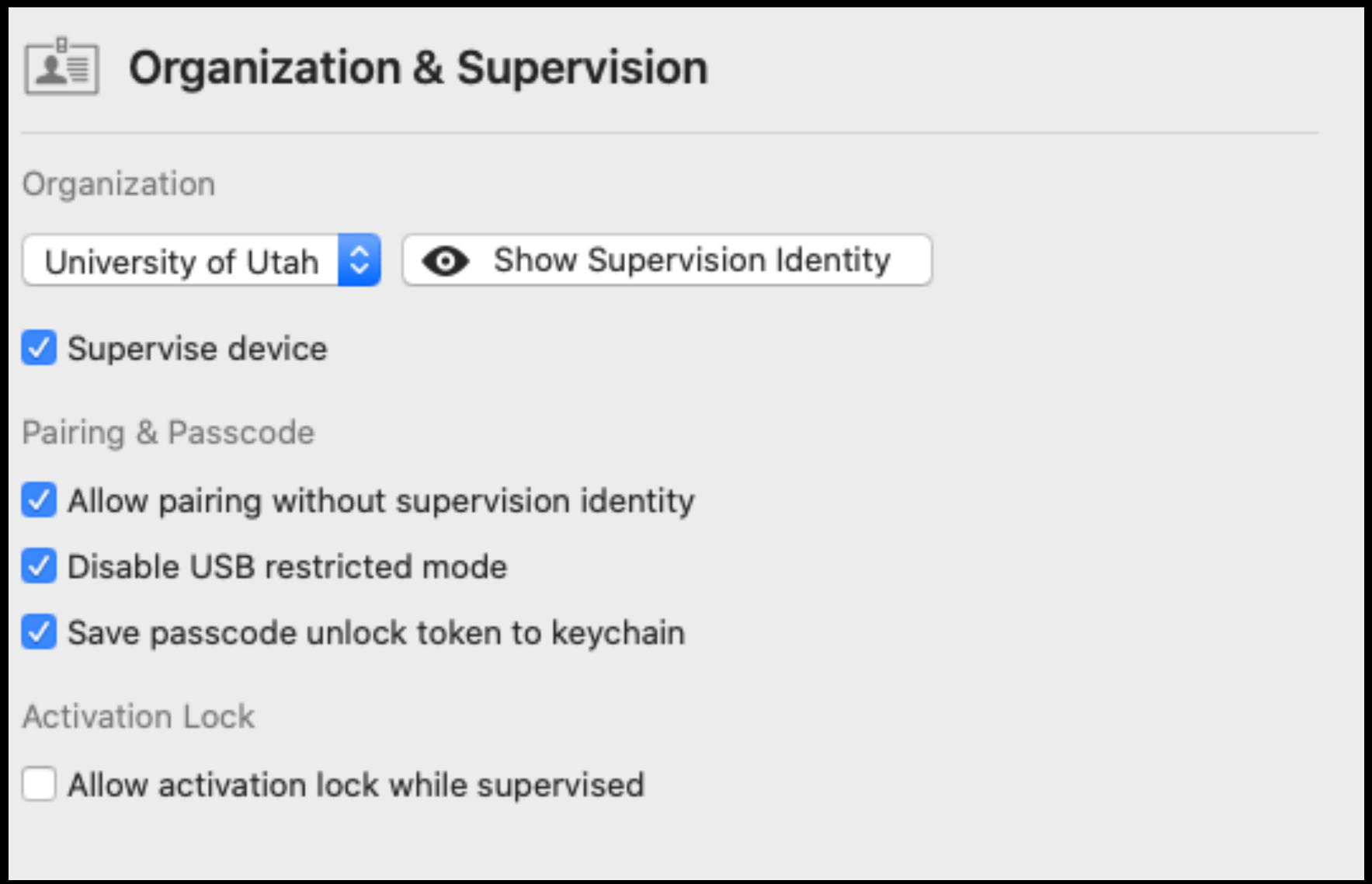
iMazing Blueprints



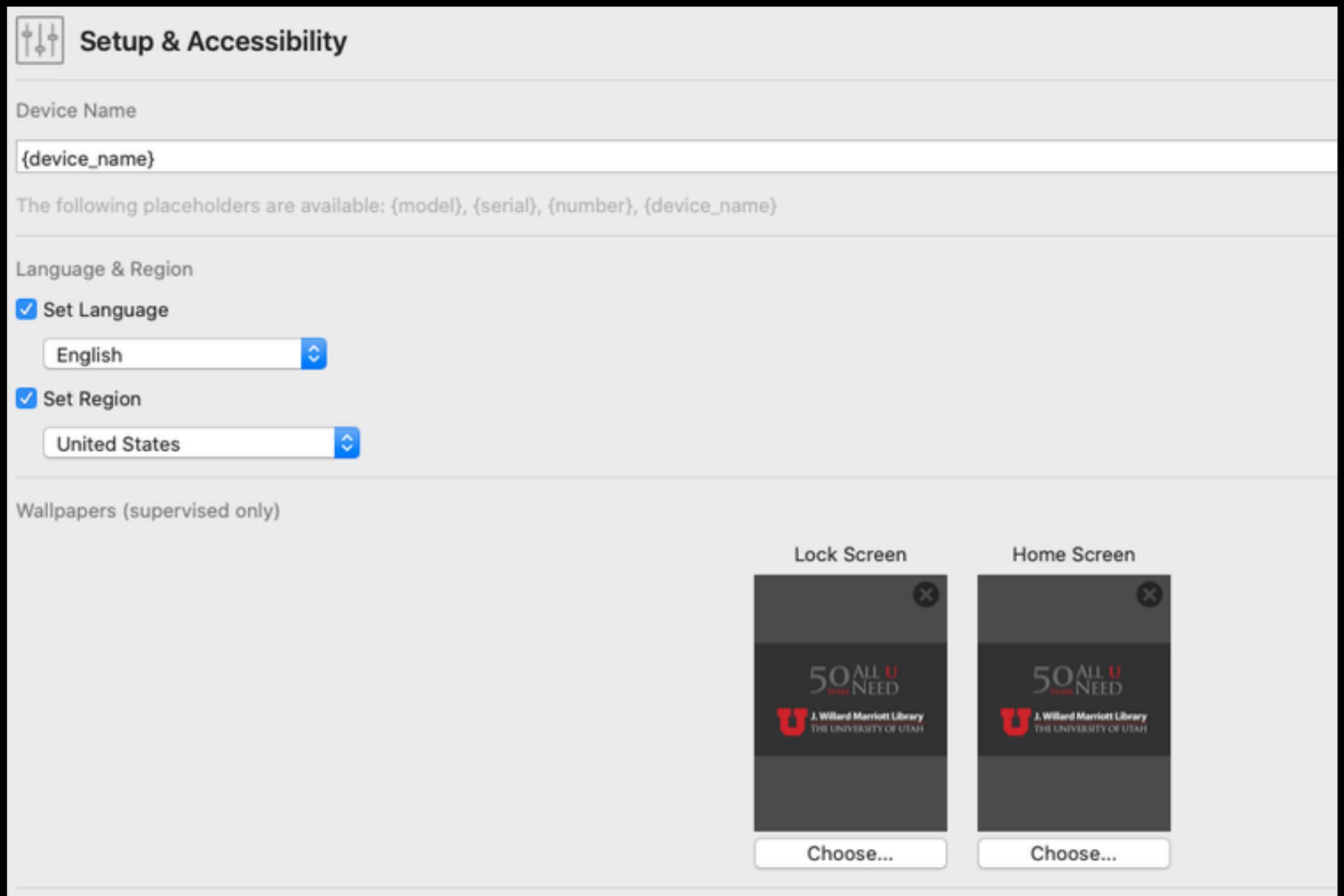
Blueprints


Editing Student iPads
General
Target devices will be erased and configuration will be applied from DEP
Organization & Supervision
Some settings will not be applied because of DEP automatic enrollment
Setup & Accessibility
Some settings will not be applied because of DEP automatic enrollment
Actions
5 configured
5
Apps
20 app(s) will be installed
20
App Files & Config
Transfer files to apps. Set their configuration.
App Restrictions
Choose which app(s) are allowed
Profiles
Configuration & provisioning profiles
General
Name
Student iPads
Description
Ignore non-critical errors when applying this blueprint
Device Type
iPad
Wi-Fi Profile
Imaging WiFi
Seconds to wait to let devices acquire Wi-Fi connection:
100
MDM and DEP Enrollment
Apply configuration from DEP (will erase device)
MDM enrollment credentials (if required):
Username
Password
Cancel
Save

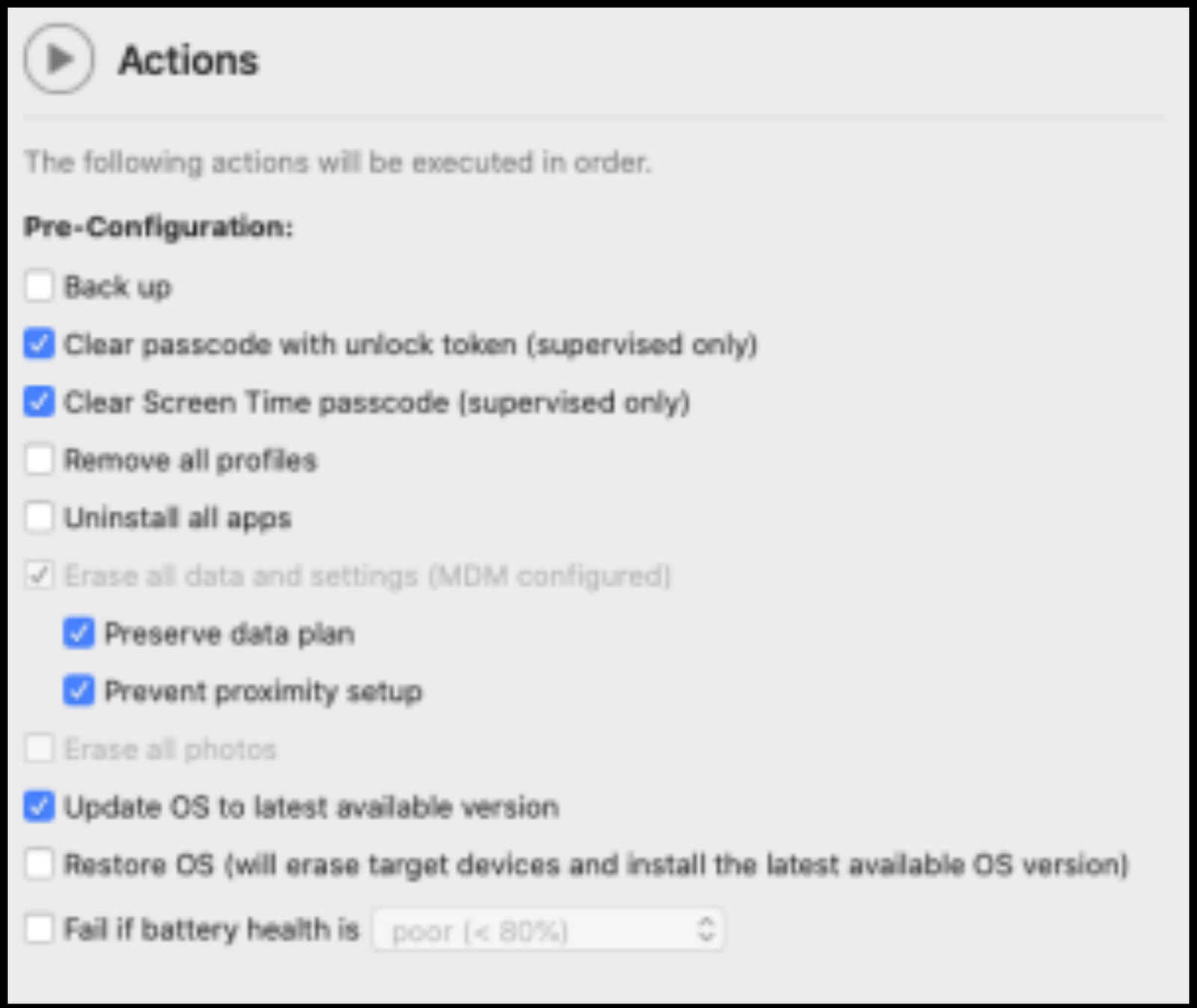
Blueprints - Supervision



Blueprints - Setup



Blueprint - Actions



Blueprint - Actions

Post-Configuration:

- [ ] Restore device's last backup
  - [ ] Don't skip DEP enrollment
- [ ] Restore backup
- [x] Skip Setup Assistant
- [ ] Set backup encryption password
- [ ] Back up
- [ ] Launch app (supervised only)
- [ ] Remove Wi-Fi profile (if configured in General)
- [ ] Remove supervision (locally supervised only)
- [ ] Wait for full battery charge
- [x] Shut down device
- [ ] Unpair device when done

Blueprint - Apps

General
Wi-Fi configured

Organization & Supervision
Organization managing the device and supervision options

Setup & Accessibility
Custom options are set

Actions
6 configured
6

Apps
6 app(s) will be installed
6

App Files & Config
Transfer files to apps. Set their configuration.

App Restrictions
Choose which app(s) are allowed

Profiles
Configuration & provisioning profiles

Apps

Apple ID or Volume Purchase Account

@ sl-apple-019@lists.utah.edu Sign Out

☐ Single app mode (supervised only)

Apps to install

Autodesk ReCap Pro for mobile
Autodesk Inc.

Box — Cloud Content Management
Box, Inc.

Canvas Student
Instructure Inc.

Microsoft OneDrive
Microsoft Corporation

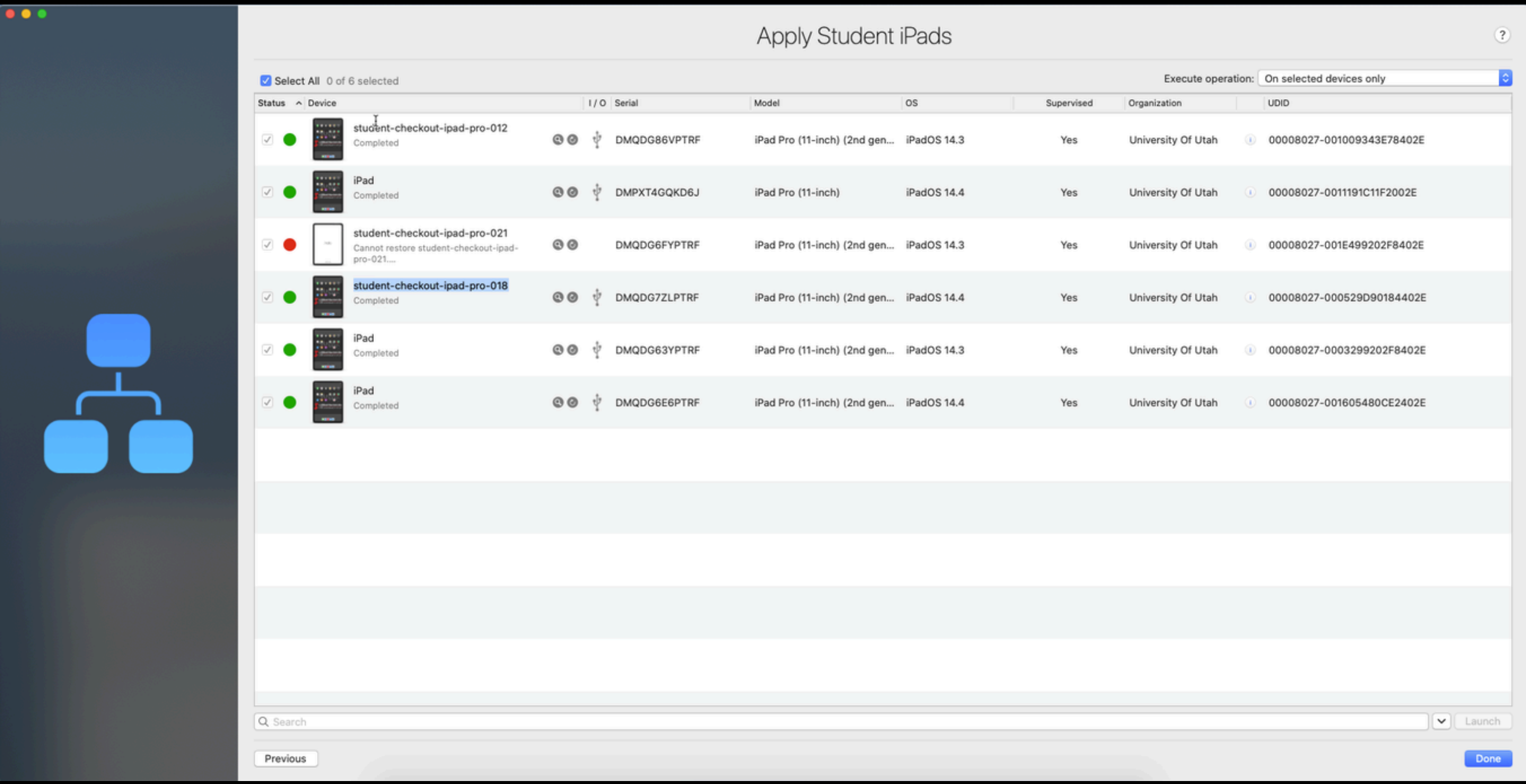
Microsoft Word
Microsoft Corporation

+ −

Cancel

Save

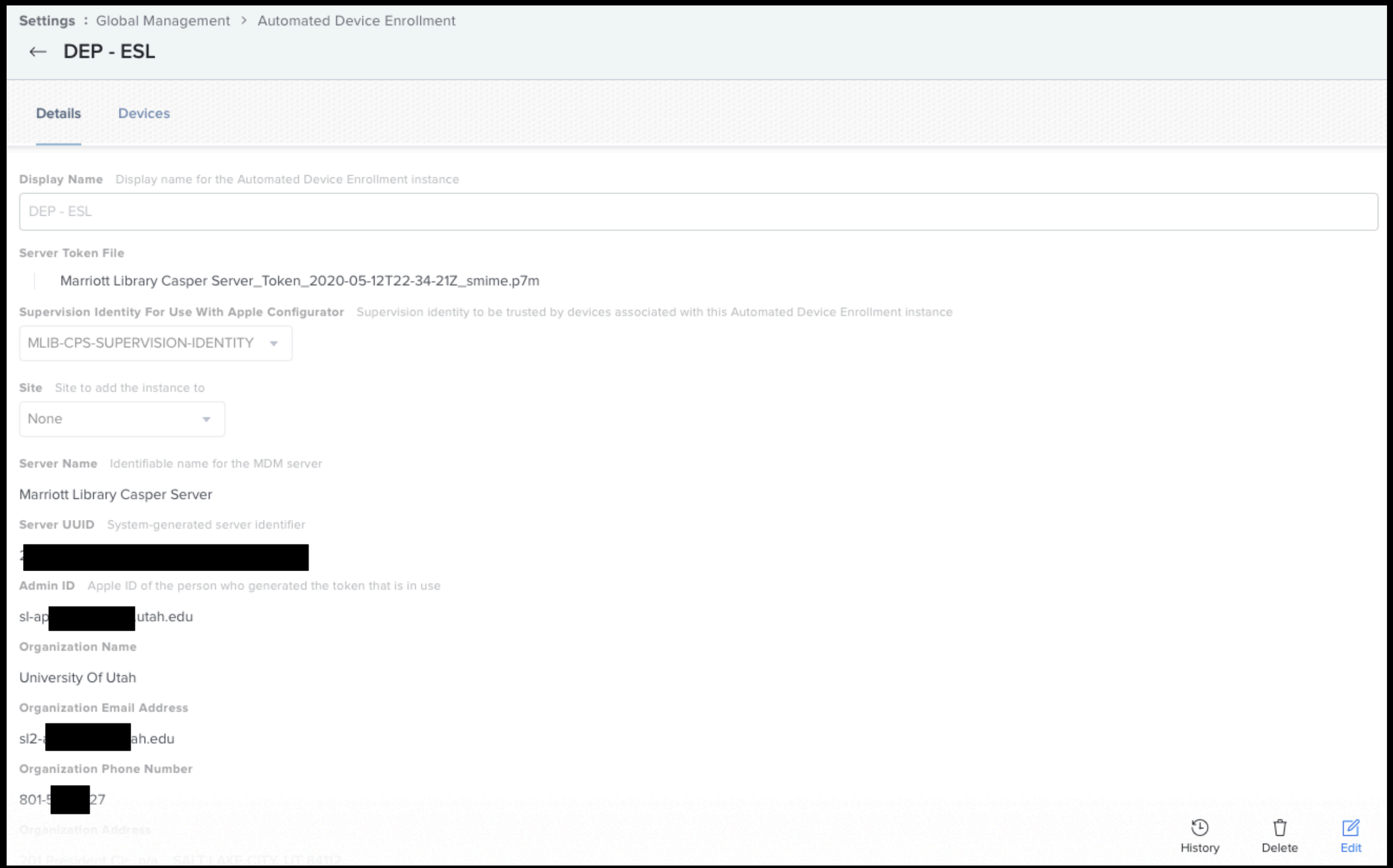
iMazing Configurator



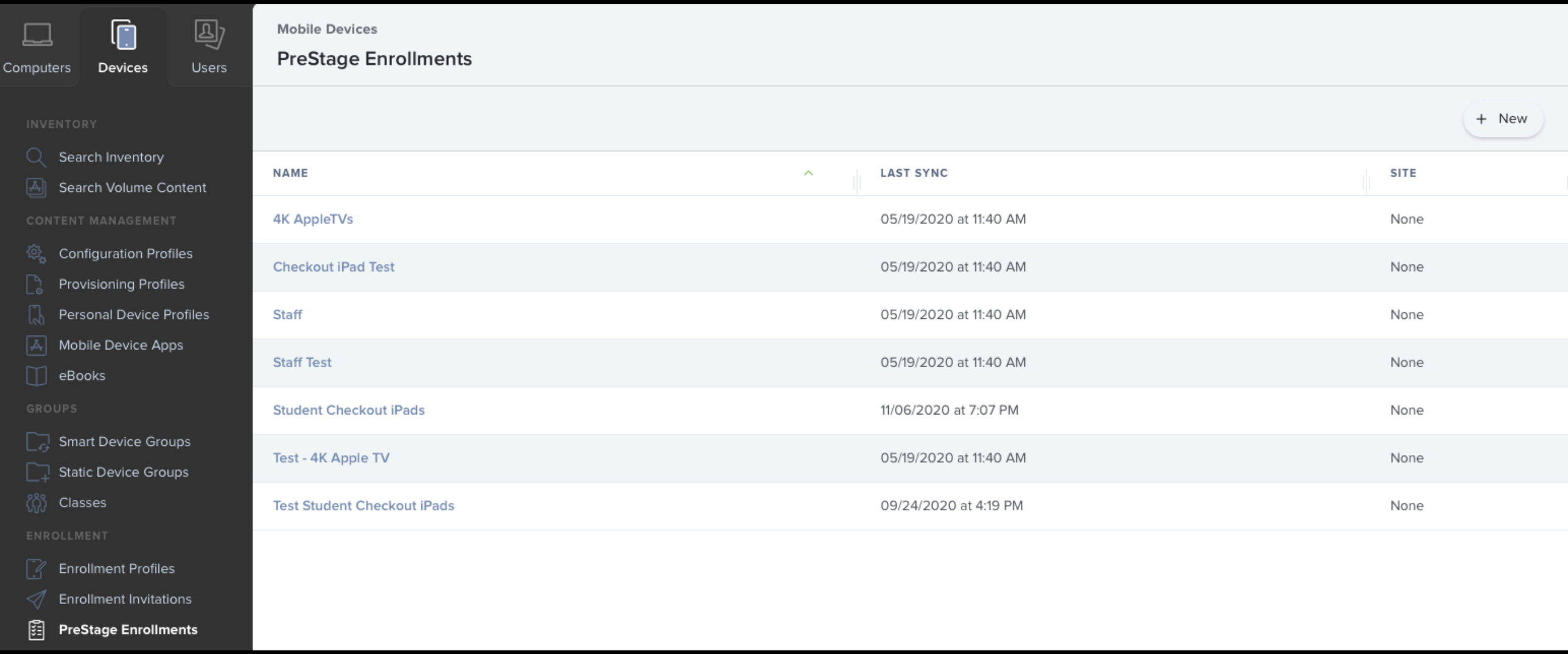
Jamf Pro Configuration

- 85% of configuration is from the server.
- Prestage Enrollment
  - Skips all Setup Assistant screens
  - Prevent Unenrollment
  - Supervise
- Configuration Profiles
  - Restrictions
  - Allowed iPad features
  - Device Based UConnect

Automated Device Enrollment



Prestage Enrollments



Prestage Enrollments

Mobile Devices : PreStage Enrollments

← Student Checkout iPads

Options | Scope

Filter Re | 1 - 101 of 101

Select All | Deselect All

DEVICE	SERIAL NUMBER	MODEL	DESCRIPTI...	ASSET TAG	DEVICE ASSIGNMENT STATUS	DEVICE ASSIGNED
student-checkout-ipad-pro-083	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM
student-checkout-ipad-pro-084	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM
student-checkout-ipad-pro-090	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM
student-checkout-ipad-pro-085	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM
student-checkout-ipad-pro-081	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM
student-checkout-ipad-pro-089	DMPD[redacted]	iPad Pro	IPAD PRO 11 WIFI 128GB SPACE GRAY-USA		Assigned	12/03/2020 at 1:59 PM

Prestage Enrollments

General

Display Name Display name for the PreStage enrollment

Student Checkout iPads

Automated Device Enrollment Instance
Automated Device Enrollment instance to associate with the PreStage enrollment. Devices associated with the selected Automated Device Enrollment instance can be assigned the PreStage enrollment

DEP - ESL

Automatically assign new devices
Automatically assign all new devices to this PreStage enrollment

Enrollment Site Site that mobile devices will be added to during enrollment

Marriott Library

Use existing site membership, if applicable

Use existing location information, if applicable

Support Phone Number Support phone number for the organization

801-[redacted]11

Prestage Enrollments

Support Email Address Support email address for the organization

Department Department to associate with the PreStage enrollment

Marriott Library, Client Platform Services

- [ ] Require Credentials for Enrollment
  Require the user to provide username and password on devices with iOS 7.1 or later
- [x] Supervise Devices with iOS 12.x or earlier
  Devices will be supervised
- [x] Make MDM Profile Mandatory for devices with iOS 12.x or earlier
  Require the user to apply the MDM profile

Settings for Supervised Devices

- [x] Pairing
  Allow devices to connect to Mac computers
- [x] Prevent Unenrollment
  Disallow the user from removing the MDM profile
- [x] Install configuration profiles before Setup Assistant
  Install configuration profiles on mobile devices in the scope before a user is presented with the Setup Assistant screens
- [ ] Enable Shared iPad
  Allow devices with iOS 9.3 or later to be shared
- [x] Prevent user from enabling Activation Lock

Prestage Enrollments

Setup Assistant Options Selected items are not displayed in the Setup Assistant during enrollment for iOS or tvOS

None

IOS And TvOS

- [x] Location Services
- [x] Siri
- [x] Apple ID and iCloud
- [x] Terms and Conditions
- [x] App Analytics
- [x] Privacy

IOS Only

- [x] Apps & Data
  - [x] Move from Android
- [x] Passcode Lock

Prestage Enrollments

- [x] Add Cellular Plan
- [x] Home Button Sensitivity
- [x] Touch ID / Face ID
- [x] Apple Pay
- [x] Display Zoom
- [x] True Tone Display
- [x] Cloud Storage
- [x] Apple Watch
- [x] New Feature Highlights
- [x] iMessage and FaceTime
- [x] Screen Time
- [x] Software Update

Prestage Enrollments

Configuration Profiles

Mobile Devices

Configuration Profiles

Filter Pr

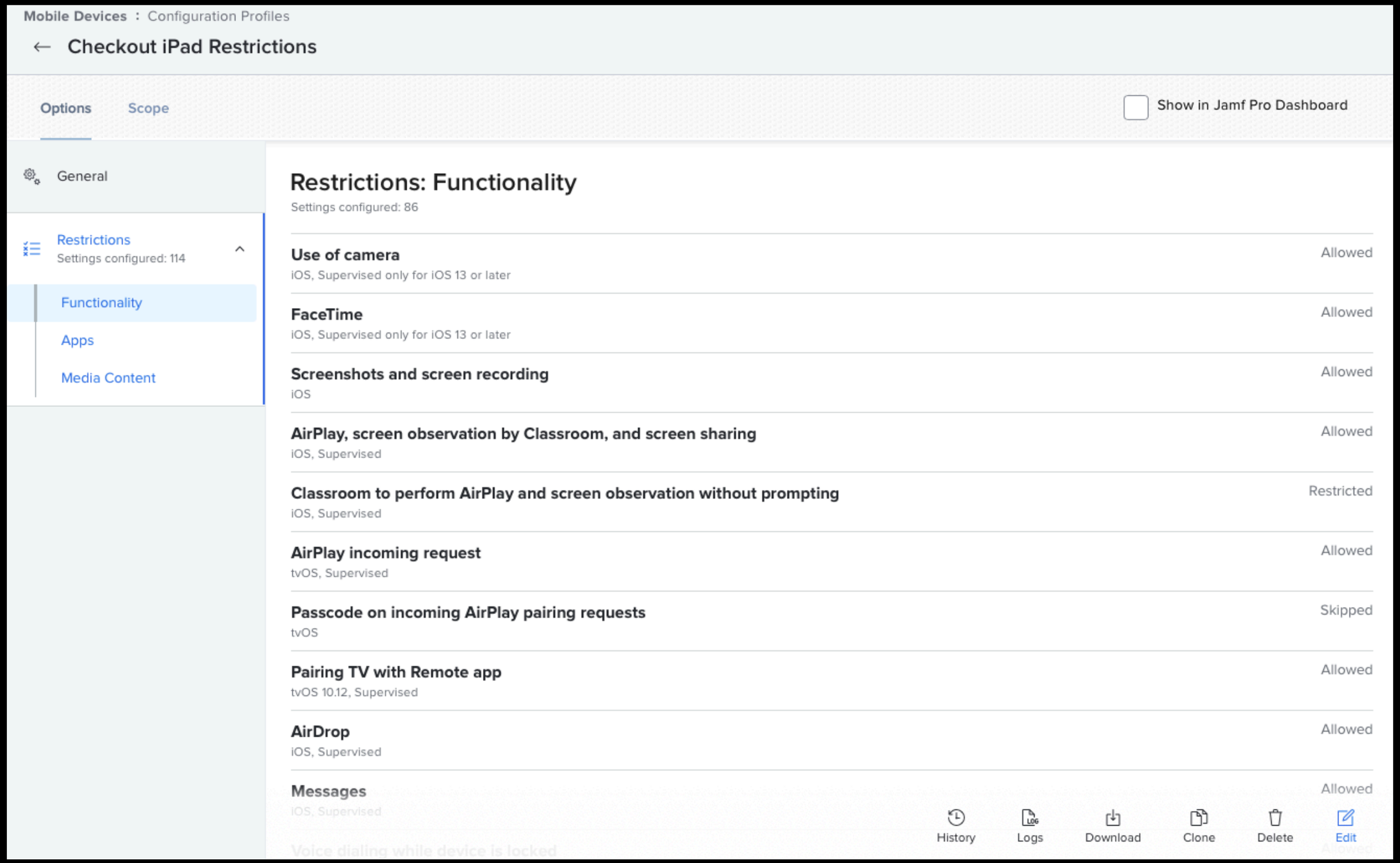
1 - 25 of **25**

+ New

Upload

NAME	LOGS	COMPLETED	PENDING	FAILED	SCOPE	SITE
Apps - Internet						
Checkout iPads						
Configuration - Displays						
Configuration - Network						
Configuration - Security						
Configuration - Staff						
Requests						

iPad Restrictions Profile



WiFi Profiles

- Uconnect (802.1X Enterprise)
- ULink (IoT)
- Imaging Hidden WiFi (Legacy)

Zero-Touch?

- Yes, with a little extra customization.
- iMazing has to be reset every night and iPads cleared.
- UI script to control iMazing

UI Script

- Resets iMazing
- Picks Blueprint to use
- Selects devices to apply the Blueprint on attachment
- Suppresses Dialogs

Automated Blueprint

Ready for Checkout

Questions?