

**Inside the**  
**Apple Device**  
**Enrollment**  
**build process**

# What's the point?

- Enables supervisory-level management features
  - Dilenates "company" versus "byod" devices
- "Out of box" deployment of a device, even remotely
- Doesn't require making hardware-specific boot images
- Helps in recovering a lost device<sup>1</sup>

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<sup>1</sup> Not really

# The major stages

1. Enrollment
2. Assignment
3. Remote Management
4. Bootstrapping MSC

# Enrollment

- Performed by the reseller: Tech Shop, CDW, or Apple directly
- Puts the device's serial number in our "pool"
- Typically the most annoying part

# Assignment

- Done by the Mac team
- Tells Apple which server to send the device to at setup
- Sorta-kind of like pre-setting a task sequence
- MDM server is given new device serial number; match-making is configured



# Apple School

Organization

Activity 9

Locations

People

Accounts

Classes

Roles

Requests

Devices

**Devices**

Assignment History

Content

Apps and Books

Custom Apps

Settings

🔍 C02DQ0EYQ6LR

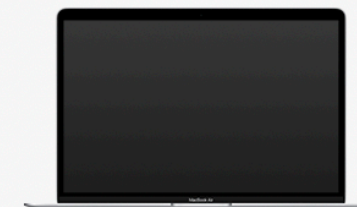


Sort by Name ▾



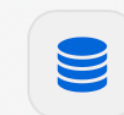
**MacBook Air**

!! Izzy at Home · C02DQ0EYQ6LR

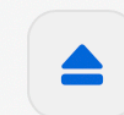


## MacBook Air

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Edit Device Management



Release Device

### Device Info

Storage

256GB

Model

MacBook Air

Serial



- Organization
- Activity
- Locations
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- Devices
- Devices**
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Sort by Name

# Change Device Management

You are about to change device management for **MacBook Air**.

Assign to server:

- ! Izzy for Mac Server - ITS-MWS Mac Engineering**
- FO Mobile Devices
- HITO MDM (dinoa) - iOS
- HITS AW Server
- HITS Intune DEV
- HITS Intune PROD
- ISR SRO TSG
- ITS-AI - iOS
- ITS-Alumni - iOS
- ITS-Athletics - iOS

Cancel

Continue

# Remote Management

- At first boot, the Mac reaches out to Apple's match-making server
- If the match-maker knows about the device (enrolled & assigned), it returns a configuration blob with server details
- Can be triggered post-build with `profiles renew -type enrollment`



# Management Payload

```
profiles show -type enrollment
```

```
....
```

```
    AwaitDeviceConfigured = 1;  
    ConfigurationURL = "https://jss.euc.it.umich.edu/cloudenroll";  
    IsMDMUnremovable = 1;  
    IsMandatory = 1;  
    IsMultiUser = 0;  
    IsSupervised = 1;  
    MDMProtocolVersion = 1;  
    OrganizationAddress = "3003 S. State St, 7071 WOTO, , ANN ARBOR, MI 48109";
```

```
....
```

# Remote Management

- Setup is configured to create the UM-Support account
- MDM installs its own tools (jamf and Service Provider Support) and a utility called `installapplications`

Computers : PreStage Enrollments

← Izzy - MiWorkspace DEP

Options

Scope

General	Configuration Profiles	
Account Settings	NAME	SCOPE
Configuration Profiles 14 Profiles	AV Conference Rooms	
User and Location	<input type="checkbox"/> AI Conference Room Wallpaper	Izzy Group: AI AV Systems
Purchasing	<input type="checkbox"/> AV Blue Wallpaper	2 computer groups, Izzy Group: AI AV Systems excluded
Attachments 0 Attachments	<input type="checkbox"/> AV BlueJeans Settings	AV Systems catalog
Certificates	<input type="checkbox"/> AV Chrome Incognito Mode	AV Systems catalog, 1 computer excluded
Enrollment Packages 0 Packages	<input type="checkbox"/> AV Disable AirPlay	AV Systems catalog
	<input type="checkbox"/> AV Disable Airport	AV Systems catalog, 4 computers excluded, Izzy Group: Academic Innovation (AI) AV Systems excluded
	<input type="checkbox"/> AV Dock	AV Systems catalog
	<input type="checkbox"/> AV Menubar	AV Systems catalog
	<input type="checkbox"/> Disable Shutdown	3 computer groups
	<input type="checkbox"/> MWireless auto-login (izzy-mwireless)	4 computers, 3 computer groups
	<input type="checkbox"/> UMMA Conference Additional Configs	Izzy Group: UMMA - Guest Account
	Docks	
	<input type="checkbox"/> Astro Labs Dock Update	LSA ISS Astro Labs
	<input type="checkbox"/> Math Gateway Labs Dock	Math Gateway Labs
	<input type="checkbox"/> Scholar Space Dock 2020-11-02	Scholar Space Systems (all)
	<input type="checkbox"/> SMTD Mac Pro Dock - June 2021	1 computer
	<input type="checkbox"/> SMTD Music Lab Dock - 2021	Izzy Group: SMTD Music Tech Lab
	<input type="checkbox"/> Stamps Printlab Dock 2022	Izzy Group: STAMPS Printlab

Computers : Policies  
← OnEnroll: InstallApps (production on-campus)

Options | Scope | Self Service | User Interaction  Show in Jamf Pro Dashboard

General  
Packages 1 Package

Scripts 1 Script

Packages  
Distribution Point Distribution point to download the package(s) from  
Cloud distribution point  
InstallApplications-2.0.2-ocampus-x86.pkg  
Action Action to take on computers  
Install  
 Update Autorun data  
Add or remove the package from each computer's Autorun data

```
Run script "changeSideTab('Packages')"
```

# Bootstrapping MSC

- installapps pulls down a list of initial packages and scripts
- installapps installs and launches DEPNotify, which creates the progress screen you see
- installapps installs Managed Software Center and Izzy client
- Izzy does its initial registration steps
- MSC is started and installs everything else
- profit!

```
jamesez — jamesez@styx: /efs/clients/dep — ssh styx — 108x40
jamesez@styx:/efs/clients/dep$ jq . bootstrap-oncampus.json
{
  "setupassistant": [
    {
      "name": "DEP Notify",
      "type": "package",
      "file": "/Library/installapplications/depnotify-1.1.6.pkg",
      "url": "https://izzyfile.dsc.umich.edu/clients/dep/pkgs/DEPNotify-1.1.6.pkg",
      "packageid": "menu.nomad.DEPNotify",
      "version": "1.1.6",
      "hash": "afff824c905fce04f4a8b9ce6a3ed13d71f3a61e84ca13aba94ea46bb0dad9fa"
    }
  ],
  "userland": [
    {
      "donotwait": true,
      "file": "/Library/installapplications/caffeinate.sh",
      "hash": "da63f80067e35ed2d0f4efb99641dca2ab0a3c6a3ab0044f2c532dd770555802",
      "name": "Caffeinate",
      "type": "rootscript",
      "url": "https://izzyfile.dsc.umich.edu/clients/dep/scripts/caffeinate.sh"
    },
    {
      "file": "/Library/installapplications/depnotify-on-campus-title.sh",
      "hash": "4c4b37db0d6e8fbf9392ac3eeada1655e78c95a62fa63dd8360530b90850be1d",
      "name": "Trigger Managed Software Center",
      "type": "rootscript",
      "url": "https://izzyfile.dsc.umich.edu/clients/dep/scripts/on-campus-build-title.sh"
    },
    {
      "file": "/Library/installapplications/userscripts/depnotify_user_launcher.py",
      "hash": "693666c34a0c82da5ec0e963c739c65a42f53f9291edc5c78d8358b972fec1f3",
      "name": "Izzy Morsels",
      "type": "userscript",
      "url": "https://izzyfile.dsc.umich.edu/clients/dep/scripts/dep-notify-launcher.py"
    }
  ],
  {
    "name": "Managed Software Center",
    "type": "package",
    "file": "/Library/installapplications/munkitools-5.6.3.4401.pkg",

```



# Issues

- Match-making misses are stored
- What about Apple Store / BestBuy purchases?

**Questions?**

**Thanks!**