

```
Last login: Fri Sep 16 14:47:13 on ttys000
jamesmick@Scott-MacBook-Pro ~ % zsh --emulate sh
$ jamesmick@Scott-Macbook-Pro ~ % sudo /Users/username/Desktop/
create_macos_recovery.sh "/Applications/Install macOS Catalina.app
>
```

```
[Restored Sep 16, 2022 at 3:16:45 PM]
```

```
Last login: Fri Sep 16 15:07:02 on ttys000
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/username/Desktop/
create_macos_recovery.sh "/Applications/Install macOS Catalina.app"
```

```
Password:
```

```
sudo: /Users/username/Desktop/create_macos_recovery.sh: command not
found
```

```
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/username?Desktop//Users/
jamesmick/Desktop/create_macos_recovery.sh "/Applications/Install
macOS Catalina.app"
```

```
zsh: no matches found: /Users/username?Desktop//Users/jamesmick/
Desktop/create_macos_recovery.sh
```

```
jamesmick@Scott-MacBook-Pro ~ %
```

```
[Restored Sep 16, 2022 at 4:13:48 PM]
```

```
Last login: Fri Sep 16 15:16:45 on ttys000
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/jamesmick/Desktop/
recovery.sh "/Applications/Install macOS Catalina.app"
```

```
Password:
```

```
sudo: /Users/jamesmick/Desktop/recovery.sh: command not found
```

```
jamesmick@Scott-MacBook-Pro ~ %
```

```
[Restored Sep 18, 2022 at 7:33:49 PM]
```

```
Last login: Sun Sep 18 15:07:38 on console
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/jamesmick/Desktop/
create_macos_recovery.sh '/Applications/Install macOS Catalina.app'
```

```
Password:
```

```
sudo: /Users/jamesmick/Desktop/create_macos_recovery.sh: command not
found
```

```
jamesmick@Scott-MacBook-Pro ~ %
```

```
[Restored Sep 18, 2022 at 8:40:22 PM]
```

```
Last login: Sun Sep 18 19:33:50 on ttys000
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/jamesmick/Desktop/
create_macos_recovery "/Applications?Install macOS Catalina.app"
```

```
Password:
```

```
sudo: /Users/jamesmick/Desktop/create_macos_recovery: command not
found
```

```
jamesmick@Scott-MacBook-Pro ~ %
```

```
[Restored Sep 19, 2022 at 11:01:36 AM]
```

```
Last login: Mon Sep 19 10:58:08 on console
jamesmick@Scott-MacBook-Pro ~ % sudo /Users/jamesmick/Desktop/
create_macos_recovery.sh '/Applications/Install macOS Catalina.app'
```

```
Password:
```

```
-- macOS installer is /Applications/Install macOS Catalina.app
-- Installer application for macOS 10.15.7 detected. Proceeding....
-- Target disk is OS Catalina.
```

```
-- Target filesystem is apfs.
-- Downloading SecUpd2020-004HighSierra.RecoveryHDUpdate.pkg into /
private/tmp
#####
77.6%#####
##### 100.0%
-- Running ensureRecoveryBooter for APFS target volume: OS Catalina
/private/tmp/recoveryupdate10.15.7/Scripts/Tools/dm - dm - Version 5
```

```
APFS EnsureRecoveryBooter: Async call initiate
APFS EnsureRecoveryBooter: Operation in progress
APFS EnsureRecoveryBooter: Operation start confirmed
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Started operations on
Target (Subject) Volume = disk1s6
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
SkipAutomaticTargetDiskSubstitutionForVolumeGroups=(null)
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
BaseSystemDMG=/Applications/Install macOS Catalina.app/Contents/
SharedSupport/BaseSystem.dmg ChunkList=/Applications/Install macOS
Catalina.app/Contents/SharedSupport/BaseSystem.chunklist
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
AppleDiagnosticsDMG=/Applications/Install macOS Catalina.app/Contents/
SharedSupport/AppleDiagnostics.dmg ChunkList=/Applications/Install
macOS Catalina.app/Contents/SharedSupport/AppleDiagnostics.chunklist
EnforceBlacklist=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
InstallAPFSMacOSBootFiles=0 APFSMacOSBootFileSource=(null)
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
MacOSOpenDirectorySourceOverride=(null)
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
MacOSSourceOverride: Lib=(null) Var=(null) Etc=(null) Usr=(null)
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
SlurpFromOldAppleBoot=0 DeleteOldAppleBoot=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Input options:
AddKernelCoreDump=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Vetting inputs
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found (Parent)
Container = 0x70000bec19d0=disk1
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: The Target Volume is
part of a Volume Group
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Volume Group ID
(UUID) = FB44FC29-4BFA-49AC-8BA6-C7E019061378
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found relevant
Container's {Designated,Additional}PhysicalStore
DPS=0x70000bec1930=disk0s2 APS=0x70000bec17f0=NOTHING
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found relevant
Container's DesignatedPhysicalStore's Whole =
DPSWhole=0x70000bec1890=disk0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Ensuring that the
Subject Volume choice is the relevant Volume Group's SYSTEM Role
```

## Volume

APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Target's Volume Group's SYSTEM Role Volume count = 1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Chosen Subject (Target) Volume = 0x70000bec1a70=disk1s6=OS Catalina  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Subject Volume subjVolDiskUUID=46808B99-87C2-4D0D-B54E-629D6E4C2A18 subjVolMP=/ subjHasMacOS=1 subjIsEncrypted=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerVolumeCount=6 List=0x7fe162719d00={ disk1s1 disk1s2 disk1s3 disk1s4 disk1s5 disk1s6 }={ 0x7fe162718e70 0x7fe162719310 0x7fe1627199d0 0x7fe16271a0d0 0x7fe16271a740 0x7fe16271ade0 } err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerVMVolumeCount=1 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerInstallerVolumeCount=0 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerPrebootVolumeCount=1 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerRecoveryVolumeCount=1 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: MountedVolumesCount=5 List=0x7fe16251dbf0={ disk1s6 disk1s5 disk1s4 disk0s3 disk1s1 } = { 0x7fe162520600 0x7fe1625206b0 0x7fe162520790 0x7fe16251d9d0 0x7fe16251dab0 }=0x7fe16251dc30={ / /System/Volumes/Data /private/var/vm /Volumes/BOOTCAMP /Volumes/Macintosh HD } err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Verified that if BS or AD DMGs given, then their ChunkLists also given  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined recoverySystemInstallCommanded=1 diagnosticsSystemInstallCommanded=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Verifying that target=subject volume's files' macOS version is equal to or less than HH.MM.LL=0xHHMMLL=0x0A0FFF  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Attaching disk image /Applications/Install macOS Catalina.app/Contents/SharedSupport/BaseSystem.dmg  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Attaching disk image /Applications/Install macOS Catalina.app/Contents/SharedSupport/AppleDiagnostics.dmg  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did ensure that needed disk images are available  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found if old DPS Apple\_Boot pre-existed=0 disk=0x70000bec1570=NOTHING  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found if old APS Apple\_Boot pre-existed=0 disk=0x70000bec14d0=NOTHING  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: APFS Preboot Volume prebootVolumePreExisted=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort, should-be-redundant UNmount of Preboot to cause DA to request others to stop using disk=0x70000bec1750=disk1s2=Preboot err=0 dissenter/PID=0/-1

APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort-possibly-redundant mount of Preboot  
disk=0x70000bec1750=disk1s2=Preboot err=0 dissenter/PID=0/-1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Expecting mounted Preboot APFS Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Preboot volume disk=0x70000bec1750=disk1s2=Preboot MP=/Volumes/Preboot existed=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Taking mount hold on Preboot APFS Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Not adding no-touch files to preboot volume root because MDS should ignore it automatically  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: APFS Recovery Volume recoveryVolumePreExisted=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort, should-be-redundant UNmount of Recovery to cause DA to request others to stop using disk=0x70000bec16b0=disk1s3=Recovery err=0 dissenter/PID=0/-1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort-possibly-redundant mount of Recovery  
disk=0x70000bec16b0=disk1s3=Recovery err=0 dissenter/PID=0/-1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Expecting mounted Recovery APFS Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Recovery volume disk=0x70000bec16b0=disk1s3=Recovery MP=/Volumes/Recovery existed=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Taking mount hold on Recovery APFS Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Not adding no-touch files to recovery volume root because MDS should ignore it automatically  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: APFS VM Volume vmVolumePreExisted=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Not making a subject dir nor otherwise checking/adding any content on the VM role volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: MountedVolumesCount=9  
List=0x7fe162530880={ disk1s6 disk1s5 disk1s4 disk0s3 disk1s1 disk2s1 disk3s1 disk1s2 disk1s3 }={ 0x7fe1625326c0 0x7fe162532ee0 0x7fe16252f2d0 0x7fe162530060 0x7fe1625301a0 0x7fe162530350 0x7fe1625304b0 0x7fe162530610 0x7fe162530770 }=0x7fe1625308e0={ / / System/Volumes/Data /private/var/vm /Volumes/BOOTCAMP /Volumes/Macintosh HD /Volumes/macOS Base System /Volumes/AppleDiagnostics /Volumes/Preboot /Volumes/Recovery } err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Assert existing-or-new subject dir name should be prebootVolumeSubjectDir=/Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: If exists, do hard test for existing Preboot Volume subject dir being a DIR  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: UUID prebootVolumeSubjectDirPreExisted=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Assert existing-or-

new subject dir name should be recoveryVolumeSubjectDir=/Volumes/  
Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: If exists, do hard  
test for any existing Recovery Volume subject dir being a DIR  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: UUID  
recoveryVolumeSubjectDirPreExisted=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined  
appleBootPartitionSlurpProceed=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Not slurping legacy  
Apple\_Boot  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Caller making  
decision on boot install, and no path  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined  
bootSystemInstallProceed=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined  
bootSystemSourcePath=  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Sourcing USR  
directory relative to given source macOS  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined  
dirThatSourceUsrDirIsIn=  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: No B00TSYS to install  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: RECOVERYSYS install  
commanded by client and commencing  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Required-Success  
Extract RECOVERYSYS DMG+Files from BS to APFS Recovery Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Bef copy+extract  
BSdmg-recsys -->CALL--> /Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: Operation 44.0% complete  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying boot loader:  
Copying SrcFile=/Volumes/macOS Base System/System/Library/  
CoreServices/boot.efi -->FILE--> IntoDir=/Volumes/Recovery/  
46808B99-87C2-4D0D-B54E-629D6E4C2A18 DstName=boot.efi  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j132ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j132ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j137ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j137ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j140aap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j140aap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base

System/System/Library/CoreServices/boot.efi.j140kap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j140kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j152fap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j152fap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j160ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j160ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j174ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j174ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j185ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j185ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j185fap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j185fap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j213ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j213ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j214kap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j214kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j215ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j215ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j223ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j223ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base

System/System/Library/CoreServices/boot.efi.j230kap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j230kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j680ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j680ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.j780ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j780ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.x589amludev.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.x589amludev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.x589icludev.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.x589icludev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/boot.efi.x589iclydev.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.x589iclydev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j132ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j132ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j137ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j137ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j140aap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j140aap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j140kap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j140kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base

System/System/Library/CoreServices/bootbase.efi.j152fap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j152fap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j160ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j160ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j174ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j174ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j185ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j185ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j185fap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j185fap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j213ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j213ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j214kap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j214kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j215ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j215ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j223ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j223ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j230kap.im4m -->FILE--  
> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j230kap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base



System/System/Library/CoreServices/bootbase.efi.j680ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j680ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.j780ap.im4m -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=boot.efi.j780ap.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.x589amludev.im4m --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18 DstName=boot.efi.x589amludev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.x589icludev.im4m --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18 DstName=boot.efi.x589icludev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
manifest for a signed boot loader: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/CoreServices/bootbase.efi.x589iclydev.im4m --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18 DstName=boot.efi.x589iclydev.im4m  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: The source  
prelinkedkernel and immutablekernel files both exist, and point to the  
same inode  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Therefore, one file  
will be copied to the destination and a hard link will be created at  
the destination  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying  
prelinkedkernel: Copying SrcFile=/Volumes/macOS Base System/System/  
Library/PrelinkedKernels/prelinkedkernel -->FILE--> IntoDir=/Volumes/  
Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Creating hardlink of  
FileEntry=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18/  
prelinkedkernel -->AS--> AdditionalFileEntry=/Volumes/Recovery/  
46808B99-87C2-4D0D-B54E-629D6E4C2A18/immutablekernel  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/PrelinkedKernels/immutablekernel.j132ap.im4m --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/PrelinkedKernels/immutablekernel.j137ap.im4m --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine  
signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base  
System/System/Library/PrelinkedKernels/immutablekernel.j140aap.im4m --

>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j140kap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j152fap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j160ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j174ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j185ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j185fap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j213ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j214kap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j215ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j223ap.im4m --

>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j230kap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j680ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.j780ap.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.x589amludev.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.x589icludev.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying a per-machine signed manifest immutable kernel: Copying SrcFile=/Volumes/macOS Base System/System/Library/PrelinkedKernels/immutablekernel.x589iclydev.im4m -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: Operation 51.0% complete  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Chosen kernel for pointing to by plist: KernelFileName=immutablekernel  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying base system image: Copying SrcFile=/Applications/Install macOS Catalina.app/Contents/SharedSupport/BaseSystem.dmg -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18 DstName=BaseSystem.dmg  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying base system version plist: Copying SrcFile=/Volumes/macOS Base System/System/Library/CoreServices/SystemVersion.plist -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying platform support plist: Copying SrcFile=/Volumes/macOS Base System/System/Library/CoreServices/com.apple.recovery.boot/PlatformSupport.plist -->FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying system image chunk list: Copying SrcFile=/Applications/Install macOS Catalina.app/

Contents/SharedSupport/BaseSystem.chunklist -->FILE--> IntoDir=/  
Volumes/Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
DstName=BaseSystem.chunklist  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Creating boot plist  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Aft copy+extract  
BSdmg-recsys err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: DIAGSYS install  
commanded by client and commencing  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Client is asking to  
NOT consider diag blacklist (that is, to always install)  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined  
diagnosticsSystemInstallProceed=1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Best-Effort  
Extracting DIAGSYS DMG+Files from AD to APFS Recovery Volume  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Bef copy+extract  
ADdmg-sys -->CALL--> /Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Creating diagnostics  
directory and copying diagnostics image  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying diagnostics  
info plist: Copying SrcFile=/Volumes/AppleDiagnostics/System/Library/  
CoreServices/.diagnostics/Info.plist -->FILE--> IntoDir=/Volumes/  
Recovery/46808B99-87C2-4D0D-B54E-629D6E4C2A18/.diagnostics  
APFS EnsureRecoveryBooter: Operation 60.0% complete  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying diagnostics  
system image: Copying SrcFile=/Applications/Install macOS  
Catalina.app/Contents/SharedSupport/AppleDiagnostics.dmg -->FILE-->  
IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/.diagnostics  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Copying diagnostics  
image chunk list: Copying SrcFile=/Applications/Install macOS  
Catalina.app/Contents/SharedSupport/AppleDiagnostics.chunklist --  
>FILE--> IntoDir=/Volumes/Recovery/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/.diagnostics  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Aft copy+extract  
ADdmg-sys err=(soft)=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Not blessing  
RECOVERYSYS because showing in Boot Picker is not desired  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Doing best-effort  
UpdatePreboot (UP) of EFI Password Unlocker File (ERWKPL),  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: as well as EFI Login  
Window Graphics, using APFS users from target volume,  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: OD database from /  
var/db/dslocal/nodes/Default, VAR from target volume, and USR from  
target volume  
APFS EnsureRecoveryBooter: UpdatePreboot: Commencing operation to  
update the Preboot Volume for Target Volume disk1s6 OS Catalina  
APFS EnsureRecoveryBooter: UpdatePreboot: The Target Volume is part of  
APFS Container disk1  
APFS EnsureRecoveryBooter: UpdatePreboot: Verifying that

target=subject volume's files' macOS version is equal to or less than  
HH.MM.LL=0xHHMMLL=0x0A0FFF  
APFS EnsureRecoveryBooter: UpdatePreboot: The Target Volume's  
OpenDirectory (non-special kind) user count is 1 and the Recovery (any  
of 4 kinds) user count is 0  
APFS EnsureRecoveryBooter: UpdatePreboot: There are OpenDirectory  
user(s) but no Recovery user(s)  
APFS EnsureRecoveryBooter: UpdatePreboot: The above is an abort  
condition for some purposes but not UpdatePreboot; continuing  
APFS EnsureRecoveryBooter: UpdatePreboot: The Target Volume is part of  
APFS Volume Group FB44FC29-4BFA-49AC-8BA6-C7E019061378  
APFS EnsureRecoveryBooter: UpdatePreboot: Custom OD and macOS source  
paths have both been specified  
APFS EnsureRecoveryBooter: UpdatePreboot: Sourcing VAR directory  
relative to source macOS  
APFS EnsureRecoveryBooter: UpdatePreboot: Sourcing USR directory  
relative to source macOS  
APFS EnsureRecoveryBooter: UpdatePreboot: Search Path For macOS Source  
Files = (nil=NotMounted) = /  
APFS EnsureRecoveryBooter: UpdatePreboot: Directory That macOS "var"  
Is Searched To Be In = (nil=NoMacOS) = /  
APFS EnsureRecoveryBooter: UpdatePreboot: Directory That macOS "usr"  
Is Searched To Be In = (nil=NoMacOS) = /  
APFS EnsureRecoveryBooter: UpdatePreboot: Open Directory Database  
Search Path = (nil=MacOSSearchPathNotMounted) = /var/db/dslocal/nodes/  
Default  
APFS EnsureRecoveryBooter: UpdatePreboot: Preserve EncryptedRootPList  
When No-OD = 1  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully opened Open  
Directory database; setting AuthODNodeOrNil accordingly  
APFS EnsureRecoveryBooter: UpdatePreboot: Mounting and ensuring as  
mounted the related Preboot Volume  
APFS EnsureRecoveryBooter: UpdatePreboot: Preboot Volume = disk1s2  
Preboot  
APFS EnsureRecoveryBooter: UpdatePreboot: Preboot Volume Target  
Directory = /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18  
APFS EnsureRecoveryBooter: UpdatePreboot: Taking mount hold on Preboot  
Volume  
APFS EnsureRecoveryBooter: UpdatePreboot: The Target Volume's Volume  
Group's "Data"-Role Volume membership count is 1  
APFS EnsureRecoveryBooter: UpdatePreboot: Obtained list of 1 APFS  
Crypto User(s) on Target Volume  
APFS EnsureRecoveryBooter: UpdatePreboot: If a "DISK" APFS Crypto User  
exists, it is expected to be FB44FC29-4BFA-49AC-8BA6-C7E019061378  
APFS EnsureRecoveryBooter: UpdatePreboot: Considering APFS Crypto User  
09F38943-FAE6-414E-AFC2-F4323436020C  
APFS EnsureRecoveryBooter: UpdatePreboot: Defaulting and requiring  
that this be an Open Directory User  
APFS EnsureRecoveryBooter: UpdatePreboot: Treating this APFS Crypto  
User to be, and requiring to match, an Open Directory User

APFS EnsureRecoveryBooter: UpdatePreboot: Correlated APFS Volume  
Crypto User with Open Directory User 09F38943-FAE6-414E-AFC2-  
F4323436020C aka "jamesmick"  
APFS EnsureRecoveryBooter: UpdatePreboot: Reading JPEG user picture of  
length 347149 from Open Directory database  
APFS EnsureRecoveryBooter: UpdatePreboot: All required data for this  
Open Directory user has been obtained  
APFS EnsureRecoveryBooter: UpdatePreboot: Parameters for  
EFILoginUserGraphics count=0 "unlockOptions"="(null)"  
APFS EnsureRecoveryBooter: UpdatePreboot: Before rendering  
EFILoginUserGraphics user (graphics/audio) resources Name=james mick  
PictureSize=(NoneIsOK)=347149 HintOptional=(null)  
APFS EnsureRecoveryBooter: UpdatePreboot: After rendering  
EFILoginUserGraphics DataObj=(NullIsError)=0x7fe162562d60  
DataLen=1142984  
APFS EnsureRecoveryBooter: UpdatePreboot: Before rendering  
EFILoginUserNamesData resources UserArrayCount=3  
APFS EnsureRecoveryBooter: UpdatePreboot: After rendering  
EFILoginUserNamesData DataObj=(NullMeansWeWillSkip)=0x7fe162562f70  
ItemCount=3  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully added a macOS  
OD User to the building dictionary  
APFS EnsureRecoveryBooter: UpdatePreboot: Processed APFS Volume Crypto  
User 09F38943-FAE6-414E-AFC2-F4323436020C  
APFS EnsureRecoveryBooter: UpdatePreboot: Error for this processed  
user was 0  
APFS EnsureRecoveryBooter: UpdatePreboot: Error among all processed  
users was 0  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully processed these  
user styles: TheDISK=0 AtLeastOneOD=1 AtLeastOneRecoveryKind=0  
APFS EnsureRecoveryBooter: UpdatePreboot: At least one OD user was  
processed successfully, so clearing among-all-users error if any  
APFS EnsureRecoveryBooter: UpdatePreboot: The Encrypted Root PList  
File content is ready  
APFS EnsureRecoveryBooter: UpdatePreboot: Not encrypting the Encrypted  
Root PList File content  
APFS EnsureRecoveryBooter: UpdatePreboot: Encrypted Root PList File to  
be created path will or would be /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EncryptedRoot.plist.wipekey  
APFS EnsureRecoveryBooter: UpdatePreboot: Proceeding to write  
Encrypted Root PList, creating a path as necessary  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote Encrypted  
Root PList File  
APFS EnsureRecoveryBooter: UpdatePreboot: DiskManagement Info PList  
File path will be /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/var/db/CryptoUserInfo.plist  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote  
DiskManagement Info PList File  
APFS EnsureRecoveryBooter: UpdatePreboot: Checking for existence of

Static EFI Resources directory /usr/standalone/i386/EfiLoginUI  
APFS EnsureRecoveryBooter: UpdatePreboot: Before copying contents of  
directory of Static EFI Resources at /usr/standalone/i386/EfiLoginUI  
into directory /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/  
usr/standalone/i386  
APFS EnsureRecoveryBooter: UpdatePreboot: After copying  
error=(ZeroMeansSuccess)=0  
APFS EnsureRecoveryBooter: UpdatePreboot: Looking for locale list on  
macOS on Target Volume  
APFS EnsureRecoveryBooter: UpdatePreboot: Locale list item count is 1  
APFS EnsureRecoveryBooter: UpdatePreboot: Before rendering  
EfiLoginInterfaceGraphics global localized resources  
APFS EnsureRecoveryBooter: UpdatePreboot: After rendering  
EfiLoginInterfaceGraphics  
FileNamesAndDataObj=(NullIsError)=0x7fe16241ce00 ItemCount=11  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/loginui.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI  
resource file  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/flag\_picker.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI  
resource file  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/preferences.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI  
resource file  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/battery.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI  
resource file  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/appleLogo.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI  
resource file  
APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI  
graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-  
B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/  
EfiLoginLocalizations/sound.efires  
APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI

resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/EFILoginLocalizations/unknown\_userUI.efires

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/EFILoginLocalizations/disk\_passwordUI.efires

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/EFILoginLocalizations/guest\_userUI.efires

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/EFILoginLocalizations/Lucida13.efires

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Writing localized EFI graphics resource file /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/System/Library/Caches/com.apple.corestorage/EFILoginLocalizations/Lucida13White.efires

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote EFI resource file

APFS EnsureRecoveryBooter: UpdatePreboot: Generating AdminUserList for Recovery purposes

APFS EnsureRecoveryBooter: UpdatePreboot: Considering admin user FFFFFFFE-DDDD-CCCC-BBBB-AAAA00000000

APFS EnsureRecoveryBooter: UpdatePreboot: Considering admin user 09F38943-FAE6-414E-AFC2-F4323436020C

APFS EnsureRecoveryBooter: UpdatePreboot: Considering admin user FFFFFFFE-DDDD-CCCC-BBBB-AAAA000000F8

APFS EnsureRecoveryBooter: UpdatePreboot: Error among all processed admin users was 0

APFS EnsureRecoveryBooter: UpdatePreboot: Writing Admin User Info File to path /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/var/db/AdminUserRecoveryInfo.plist

APFS EnsureRecoveryBooter: UpdatePreboot: Successfully wrote Admin User Info File

APFS EnsureRecoveryBooter: UpdatePreboot: Checking for existence of Secure Access Token file /var/db/dslocal/nodes/Default/secureaccesstoken.plist

APFS EnsureRecoveryBooter: UpdatePreboot: Before copying Secure Access



Token file /var/db/dslocal/nodes/Default/secureaccesstoken.plist into directory /Volumes/Preboot/46808B99-87C2-4D0D-B54E-629D6E4C2A18/var/db  
APFS EnsureRecoveryBooter: Operation 75.0% complete  
APFS EnsureRecoveryBooter: UpdatePreboot: After copying  
error=(ZeroMeansSuccess)=0  
APFS EnsureRecoveryBooter: UpdatePreboot: Releasing mount hold on Preboot Volume  
APFS EnsureRecoveryBooter: UpdatePreboot: Doing memory releases  
APFS EnsureRecoveryBooter: UpdatePreboot: Exiting Update Preboot operation with overall error=(ZeroMeansSuccess)=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did graphics update (UpdatePreboot) err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Target is not encrypted, so not verifying existence of an EncryptedRootPListWipeKey EFI Login User List  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Looking for APFS EFI driver at /usr/standalone/i386/apfs.efi  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found APFS EFI driver source file  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Parent ContainerSchemeWholeDisk=disk1  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Read into buffer efiDriverData = (nil=error) obj=0x7fe16256bf90  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Bef  
APFSContainerEFIEmbed disk=disk1 buf=0x7fe164720000 len=630136  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Aft  
APFSContainerEFIEmbed err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Determined appleBootPartitionRemovalProceed=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Looking for pre-existing core dump partitions on 0x70000bec1890=disk0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Found corePartitionPreExisted=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did so far decide corePartitionAdditionProceed=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did cancel-KCD-due-to-AB-staying check, corePartitionAdditionProceed=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Reverifying ContainerRef=0x70000bec19d0=disk1 ContainerDPS=0x70000bec1930=disk0s2 ContainerDPSToRef=0x70000bec1430=disk1 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerVolumeCount=6 List=0x7fe1627632a0={ disk1s1 disk1s2 disk1s3 disk1s4 disk1s5 disk1s6 }={ 0x7fe162761d10 0x7fe1627621f0 0x7fe1627628d0 0x7fe162762fb0 0x7fe162763630 0x7fe162763d00 } err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerVMVolumeCount=1 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerInstallerVolumeCount=0 err=0  
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: ContainerPrebootVolumeCount=1 err=0

```
APFS EnsureRecoveryBooter: EnsureRecoveryBooter:
ContainerRecoveryVolumeCount=1 err=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Finished operations
normally on disk1s6 with Preboot Volume disk1s2 and Recovery Volume
disk1s3
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: At exit with retErr=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Releasing mount hold
on Preboot Volume
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Releasing mount hold
on Recovery Volume
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort
unmount of preboot volume err=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort
unmount of recovery volume err=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Detaching Base System
disk image
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Detaching Diagnostics
disk image
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Did best-effort
unmount and detach source images as needed to restore previous dmg
states
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: MountedVolumesCount=5
List=0x7fe162767eb0={ disk1s6 disk1s5 disk1s4 disk0s3 disk1s1 }
={ 0x7fe162767dd0 0x7fe16271d350 0x7fe16271d400 0x7fe16271d4b0
0x7fe16271d560 }=0x7fe162720490={ / /System/Volumes/Data /private/var/
vm /Volumes/BOOTCAMP /Volumes/Macintosh HD } err=0
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Releasing memory
APFS EnsureRecoveryBooter: EnsureRecoveryBooter: Exiting operations
APFS EnsureRecoveryBooter: Operation 100.0% complete
APFS EnsureRecoveryBooter: Operation fully complete
APFS EnsureRecoveryBooter: Operation finished
-- Successfully created 10.15.7 Recovery volume on OS Catalina.
jamesmick@Scott-MacBook-Pro ~ %
```