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1  #!/usr/bin/env bash
2
3  ## Build Disk Image
4  ## This builds a FAT32 disk image for OS files. It also installs a
5  ## syslinux MBR.
6  ##
7  ## Notes:
8  ## - Only call this script via Makefile! It is not hardened.
9
10 buildfiles="$1"
11 outfile="$2"
12 user="$SUDO_USER"
13
14 # Create the output file
15
16 SECTOR_SIZE=512 # This can technically change, but probably won't for
17                 # disk images.
18
19 dd if=/dev/zero of="$outfile" bs="1M" count="6000" status=progress
20
21 # Create the partition table
22 sfdisk --unit M "$outfile" << EOF
23 ,2048,c,*
24 ,2048,S
25 ,,L
26 ;
27 EOF
28
29 # Format as FAT32 partition
30 boot part line="$(sfdisk -d --unit S "$outfile" | tr -d ',' | sed '4p;d')"
31 boot part start sector="$(echo "$boot part line" | awk '{print $4}')"
32 boot part size sector="$(echo "$boot part line" | awk '{print $6}')"
33 boot part start bytes=$((boot part start sector*SECTOR_SIZE))
34 boot part size bytes=$((boot part size sector*SECTOR_SIZE))
35 lodev="$(sudo losetup --offset "$boot part start bytes" --sizelimit "$boot part size bytes" --show
--find "$outfile")"
36 sudo mkfs.vfat -F32 -S "$SECTOR_SIZE" -s 1 "$lodev"
37
38 # Copy over build files
39 mountdir="$(mktemp -d)"
40 sudo mount -t vfat -o rw "$lodev" "$mountdir"
41 sudo cp -a "$buildfiles/." "$mountdir" 2>/dev/null
42 sudo umount "$mountdir"
43 sudo losetup -d "$lodev"
44
45 # Format as swap space
46 swap part line="$(sfdisk -d --unit S "$outfile" | tr -d ',' | sed '5p;d')"
47 swap part start sector="$(echo "$swap part line" | awk '{print $4}')"
48 swap part size sector="$(echo "$swap part line" | awk '{print $6}')"
49 swap part start bytes=$((swap part start sector*SECTOR_SIZE))
50 swap part size bytes=$((swap part size sector*SECTOR_SIZE))
51 lodev="$(sudo losetup --offset "$swap part start bytes" --sizelimit "$swap part size bytes" --show
--find "$outfile")"
52 sudo mkswap "$lodev"
53 sudo losetup -d "$lodev"
54
55 # Format as ext4 for data (want a fs with journaling in case power goes
56 # out).
57 data part line="$(sfdisk -d --unit S "$outfile" | tr -d ',' | sed '6p;d')"
58 data part start sector="$(echo "$data part line" | awk '{print $4}')"
59 data part size sector="$(echo "$data part line" | awk '{print $6}')"
60 data part start bytes=$((data part start sector*SECTOR_SIZE))
61 data part size bytes=$((data part size sector*SECTOR_SIZE))
62 lodev="$(sudo losetup --offset "$data part start bytes" --sizelimit "$data part size bytes" --show
--find "$outfile")"
63 sudo mkfs.ext4 "$lodev"
64 sudo losetup -d "$lodev"
65
66 # Format the other partition, which will be mounted for persistent
67 # database storage. Using ext4 because of journaling for possible
68 # power outages.
69 # sda2_start_bytes=$((1*SECTOR_SIZE))
70
71
72
73 # Make syslinux partition

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```
74 syslinux --directory "/boot/syslinux" --offset "$boot_part_start_bytes" "$outfile"  
75 dd if=/usr/share/syslinux/mbr.bin of="$outfile" conv=notrunc status=progress  
76
```