Create custom debian live usb-stick (stretch)

Install necessary packages on the build system

```
root@host:~# apt-get install debootstrap syslinux isolinux squashfs-tools
genisoimage memtest86+ rsync
[ ... ]
```

Create directory structure & install base image

```
root@host:~# mkdir /root/shtf-stick && cd /root/shtf-stick

root@host:~/shtf-stick# debootstrap --arch=i386 --variant=minbase stretch
chroot http://http.at.debian.org/debian/
[ ... ]
```

Perform basic configuration

```
root@host:~/shtf-stick# chroot ./chroot
root@host:/# echo shtf > /etc/hostname
root@host:/# passwd root
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@host:/# mount none -t proc /proc && \
mount none -t sysfs /sys && \
mount none -t devpts /dev/pts && \
export HOME=/root && \
export LC_ALL=C && \
apt-get update && \
apt-get install dialog dbus --yes && \
dbus-uuidgen > /var/lib/dbus/machine-id

root@host:/# apt-get install --no-install-recommends --yes linux-image-586
firmware-linux-free systemd-sysv live-boot kbd console-data
[ ... ]
```

Install additional packages

```
root@host:/# apt-get install --no-install-recommends --yes \
network-manager net-tools wireless-tools wpagui tcpdump wget openssh-client
```

```
\
blackbox xserver-xorg-core xserver-xorg xinit xterm \
pciutils usbutils gparted ntfs-3g hfsprogs rsync less curl tcpdump
dosfstools syslinux partclone vim pv \
firefox-esr chntpw lvm2 mdadm mc htop keepassx gdisk gnupg duplicity
iproute2 s3cmd inetutils-ping inetutils-traceroute lsof screen netcat-
openbsd

[ ... ]
```

Cleanup & leave chroot environment

```
root@host:/# rm -f /vmlinuz* /initrd.img* /var/lib/dbus/machine-id && \
apt-get clean && \
rm /etc/resolv.conf && \
umount -lf /proc /sys /dev/pts

root@host:/# exit
exit
root@debian:~/shtf-stick# umount -lf $(mount | awk '/shtf-stick/ { print $3
}')
root@host:~/shtf-stick# rm chroot/root/.bash_history
```

Create filesystem & boot config

```
root@host:~/shtf-stick# mkdir -p image/{live,isolinux}

root@host:~/shtf-stick# mksquashfs chroot image/live/filesystem.squashfs -e
boot
Parallel mksquashfs: Using 1 processor
Creating 4.0 filesystem on image/live/filesystem.squashfs, block size
131072.
[================================================================================
==============================================/] 25507/25507 100%

Exportable Squashfs 4.0 filesystem, gzip compressed, data block size 131072
    compressed data, compressed metadata, compressed fragments, compressed
xattrs
    duplicates are removed
Filesystem size 305495.00 Kbytes (298.33 Mbytes)
    39.71% of uncompressed filesystem size (769303.94 Kbytes)
Inode table size 311570 bytes (304.27 Kbytes)
    29.08% of uncompressed inode table size (1071399 bytes)
Directory table size 300335 bytes (293.30 Kbytes)
    42.66% of uncompressed directory table size (703968 bytes)
```

```
Number of duplicate files found 809
Number of inodes 30836
Number of files 21710
Number of fragments 2182
Number of symbolic links  6003
Number of device nodes 8
Number of fifo nodes 0
Number of socket nodes 0
Number of directories 3115
Number of ids (unique uids + gids) 10
Number of uids 2
    root (0)
    systemd-timesync (100)
Number of gids 9
    root (0)
    shadow (42)
    utmp (43)
    rtkit (109)
    tty (5)
    systemd-journal (101)
    staff (50)
    adm (4)
    mail (8)
root@host:~/shtf-stick#
root@host:~/shtf-stick# cp chroot/boot/vmlinuz-* image/live/vmlinuz1 && \
cp chroot/boot/initrd.img-* image/live/initrd1
root@host:~/shtf-stick# cat > image/isolinux/isolinux.cfg << _EOF_
UI menu.c32

prompt 0
menu title The Shit Has Hit The Fan

timeout 300

label Debian Live 4.9.0-3-686
menu label ^Debian Live 4.9.0-3-686
menu default
kernel /live/vmlinuz1
append initrd=/live/initrd1 boot=live

label memtest86+
menu label ^Memory Failure Detection (memtest86+)
kernel /live/memtest
_EOF_

root@host:~/shtf-stick#
```

Create CD image

```
root@host:~/shtf-stick# cp /usr/lib/ISOLINUX/isolinux.bin image/isolinux/ &&
\
cp /usr/lib/syslinux/modules/bios/menu.c32 image/isolinux/ && \
cp /usr/lib/syslinux/modules/bios/libmenu.c32 image/isolinux/ && \
cp /usr/lib/syslinux/modules/bios/libutil.c32 image/isolinux/ && \
cp /usr/lib/syslinux/modules/bios/ldlinux.c32 image/isolinux/ && \
cp /usr/share/misc/pci.ids image/isolinux/ && \
cp /boot/memtest86+.bin image/live/memtest

root@host:~/shtf-stick# cd image && \
genisoimage -rational-rock -volid "SHTF" -cache-inodes -joliet -full-
iso9660-filenames -b isolinux/isolinux.bin -c isolinux/boot.cat -no-emul-
boot -boot-load-size 4 -boot-info-table -output ../debian-shtf-$(date
+%Y%m%d_%H%M).iso . && \
cd ..
```

Prepare USB stick

```
root@host:~/shtf-stick# export DEVICE=/dev/sdc
root@host:~/shtf-stick# dd if=/dev/zero of=${DEVICE} bs=1k count=100
100+0 records in
100+0 records out
102400 bytes (102 kB) copied, 1.5086 s, 67.9 kB/s
root@host:~/shtf-stick# fdisk ${DEVICE}

Welcome to fdisk (util-linux 2.25.2).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0x374a220b.

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-2005431, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-2005431, default 2005431):

Created a new partition 1 of type 'Linux' and of size 978.2 MiB.

Command (m for help): a
```

```
Selected partition 1
The bootable flag on partition 1 is enabled now.

Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): b
If you have created or modified any DOS 6.x partitions, please see the fdisk
documentation for additional information.
Changed type of partition 'Linux' to 'W95 FAT32'.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

root@host:~/shtf-stick# mkdosfs -F 32 -I ${DEVICE}1
mkfs.fat 3.0.27 (2014-11-12)

root@host:~/shtf-stick#
```

Create USB Stick

```
root@host:~/shtf-stick# export DEVICE=/dev/sdc
root@host:~/shtf-stick# syslinux -i ${DEVICE}1

root@host:~/shtf-stick# dd if=/usr/lib/syslinux/mbr/mbr.bin of=${DEVICE}
conv=notrunc bs=440 count=1
1+0 records in
1+0 records out
440 bytes (440 B) copied, 0.0564548 s, 7.8 kB/s

root@host:~/shtf-stick# mkdir /mnt/usb; \
mount ${DEVICE}1 /mnt/usb

root@host:~/shtf-stick# cp /usr/lib/syslinux/modules/bios/libutil.c32
/mnt/usb/ && \
cp /usr/lib/syslinux/modules/bios/libmenu.c32 /mnt/usb/ && \
cp /usr/lib/syslinux/modules/bios/menu.c32 /mnt/usb/ && \
cp /boot/memtest86+.bin /mnt/usb/memtest && \
cp image/isolinux/isolinux.cfg /mnt/usb/syslinux.cfg && \
cp /usr/share/misc/pci.ids /mnt/usb/ && \
rsync -rv image/live /mnt/usb/
sending incremental file list
live/
live/filesystem.squashfs
live/initrd1
live/vmlinuz1

sent 308,553,889 bytes  received 77 bytes  88,158,276.00 bytes/sec
```

```
total size is 308,478,319  speedup is 1.00

root@host:~/shtf-stick# umount /mnt/usb/
root@host:~/shtf-stick#
```

Source: http://willhaley.com/blog/create-a-custom-debian-stretch-live-environment-ubuntu-17-zesty/

kb, linux, shtf, usb-stick

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