

How to Build a Chromium-Based Kiosk

- [Installing a Debian Machine](#)
- [Hosting Web Content Locally](#)
- [Minimizing Disk Writes](#)

Installing a Debian Machine

Bootstrapping a Debian Machine Protecting GRUB with a Password

Installation

```
sudo apt install cage chromium kanshi
```

```
sudo useradd -d "/var/lib/chromium" --create-home --groups input,render,video  
--shell /usr/sbin/nologin --system chromium
```

```
sudo tee "/etc/systemd/system/wl-chromium.service" >/dev/null <<'EOF'  
[Unit]  
Description=Wayland Kiosk (Chromium)  
Conflicts=getty@tty1.service  
After=getty@tty1.service  
  
[Service]  
Type=simple  
User=chromium  
Group=chromium  
PAMName=login  
TTYPath=/dev/tty1  
TTYReset=yes  
TTYVHangup=yes  
TTYVTDisallocate=yes  
StandardInput=tty  
StandardOutput=journal  
StandardError=journal  
UtmpIdentifier=tty1  
UtmpMode=user  
  
EnvironmentFile=/etc/default/chromium  
Environment=XDG_SESSION_TYPE=wayland  
  
ExecStartPre=/usr/bin/mkdir -p $XDG_RUNTIME_DIR/chromium-cache  
ExecStart=/usr/bin/cage -- /usr/bin/chromium --disk-cache-  
dir=$XDG_RUNTIME_DIR/chromium-cache --disk-cache-size=1073741824 $CHROMIUM_OPTS  
  
Restart=always  
RestartSec=2
```

```
[Install]
WantedBy=graphical.target
EOF
```

```
sudo tee "/etc/default/chromium" >/dev/null <<'EOF'
CHROMIUM_OPTS="--ozone-platform=wayland --no-first-run --noerrdialogs --kiosk
--disable-session-crashed-bubble --disable-infobars --overscroll-history-
navigation=0 --disable-pinch http://127.0.0.1/"
EOF
```

```
sudo tee "/etc/systemd/system/kanshi.service" >/dev/null <<'EOF'
[Unit]
Description=Wayland Output Management
After=wl-chromium.service
Requires=wl-chromium.service
PartOf=wl-chromium.service

[Service]
Type=simple
User=chromium
Group=chromium
PAMName=login

ExecStartPre=/bin/sleep 2
ExecStart=/usr/bin/kanshi

Restart=on-failure
RestartSec=2

[Install]
WantedBy=graphical.target
EOF
```

```
sudo systemctl daemon-reload
sudo systemctl disable --now getty@tty1.service
sudo systemctl enable --now wl-chromium.service
sudo systemctl enable --now kanshi.service
```

Configuration

Minimize System Verbosity

```
GRUB_TIMEOUT=1  
GRUB_CMDLINE_LINUX_DEFAULT="quiet loglevel=3 consoleblank=0"
```

```
sudo update-grub
```

Troubleshooting

Video Playback is Not Working

```
sudo apt install intel-media-va-driver vainfo
```

Debugging

```
sudo apt install evtest libinput-tools python3-evdev
```

Hosting Web Content Locally

Installation

```
sudo apt install nginx
```

Minimizing Disk Writes

Make Journal Storage Volatile

```
[Journal]
Storage=volatile
RuntimeMaxUse=256M
Compress=yes
ForwardToSyslog=no
```

Mount options - noatime

```
UUID=xxxx / ext4 errors=remount-ro,noatime 0 1
```

Disable Coredump

```
[Coredump]
Storage=none
```

Disable services

```
sudo systemctl disable --now man-db.timer
sudo systemctl disable --now apt-daily.timer apt-daily-upgrade.timer
```

Watch What Writes to Disk

```
sudo iotop -o -a
```