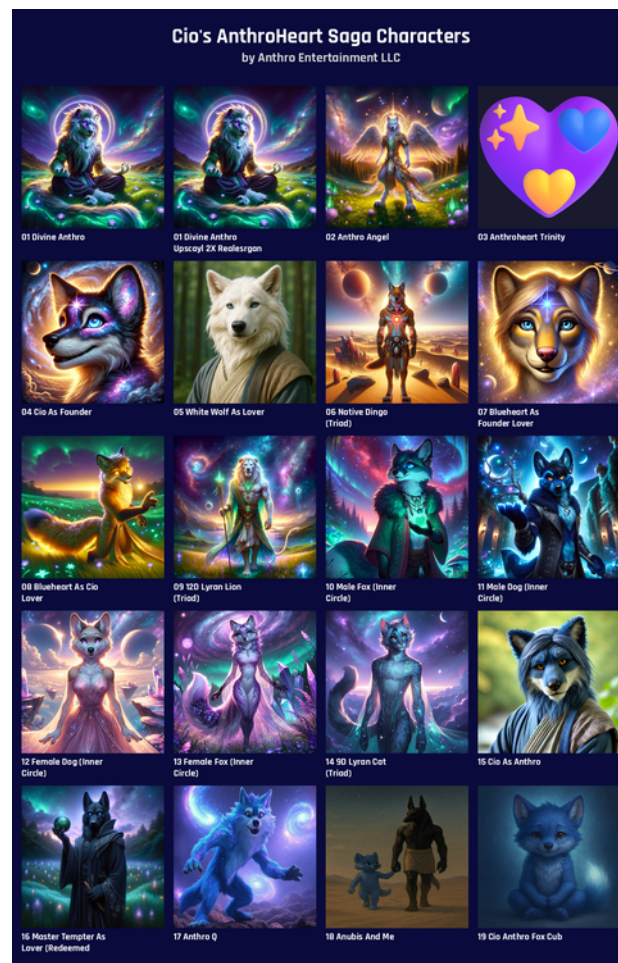




# FurryOS

## The Golden Master Handbook

Edition: 2026-01-01



# Chapter 1: Welcome to the New Paradigm

FurryOS is not just an operating system; it is a philosophy given digital form. Built on the rock-solid foundation of Debian 13 "Trixie", it strips away the corporate bloat and replaces it with specific, user-centric profiles. Whether you are a gamer seeking raw frames, a grandparent needing simplicity, or a developer building the future, FurryOS adapts to you.

## The Four Modes

Mode	Target User	Technical Impact
■ Gamer	Speed Demons	Disables CUPS/Cron. Sets CPU governor to 'performance'. Max FPS.
■ Granny	Stability	Locks Panel layout. Increases font size (DPI). Auto-updates. Hard to break.
■ Hacker	Creators	Installs build-essential, git, vim. Unlocks system write access.
■■ Paranoid	Privacy	Deny-all Firewall. MAC Spoofing. RAM/Logs wipe on shutdown.

# Chapter 2: Technical Specifications

FurryOS is driven by a 'Genome' configuration that defines its behavior.

## System Genome (confia/GENOME.vaml)

```
meta:
  framework_name: furryos genome
  codename: sovereign universe
  version: 8.1.0
  initial: gemini-3-pro-via-api-key
  revision: claude-4.5-sonnet-via-perplexity-pro
  timestamp: 2025-12-30 03:47:53 UTC
  author: thomas b sweet (anthro teacher)
  owner: anthro entertainment llc
  license: mit
  provenance:
    blockchain_anchor: bitcoin block 929481
    asset_source: anthroheart.com
    domains:
      - furry-os.com
      - furry-os.org
      - anthroheart.com
    repository: https://github.com/anthroheart/furryos
  philosophy: minimal live installer, maximum user choice, bleeding-edge stability,
user empowerment
  key_features:
    - Wayland as preferred display server
    - Enhanced Btrfs integration with automatic snapshots and rollback
    - Optimized ZRAM with ZSTD compression
    - Comprehensive dynamic theming capabilities
    - Default PipeWire audio server
    - Integrated Flatpak support for universal applications
    - Secure Boot and TPM 2.0 integration for enhanced security
    - Systemd-homed for secure and portable user home directories
    - Advanced power management with TLP
    - Modern kernel features (PDS scheduler, BPF)
    - Optional immutable-like root filesystem resilience
    - Atomic and transactional system updates with robust rollback
  live_environment:
    description: boots into live mode with visual indicator
    visual_indicator:
      border: animated pulsing border around entire screen
      color: "#FF6B35"
      width: 8px
      animation: pulse 2s infinite
      message: "\U0001F43E LIVE MODE - NOT INSTALLED YET \U0001F43E"
      position: top center, always visible
      dismiss: false
    capabilities:
      - test hardware compatibility
      - preview desktop environment (Wayland preferred, X11 fallback)
      - connect to wifi
      - browse web
      - access installer wizard
      - system diagnostics and repair tools
    persistence: false
    ram_usage: 512MB minimum, 2GB recommended
  installer:
    type: hybrid live-net
```

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target_size:
  live_core: 1.2GB (squashfs with MATE)
  net_installer: 300MB (minimal kernel only)
strategy:
  offline: installs from USB stick (fast, no internet needed)
  online: downloads latest packages during install (slower, but up-to-date)
size: 300MB ISO (minimal kernel + assets)
wizard:
  step1_welcome:
    ask_experience: true
  levels:
    beginner: granny mode - automatic everything
    intermediate: gamer mode - guided with choices
    advanced: hacker mode - full control, includes advanced
Btrfs/Wayland/Networking options
  paranoid: ghost mode - privacy first, immutable root option available,
enhanced security
  step2_hardware:
    auto_detect:
      - cpu
      - gpu
      - ram
      - storage
      - wifi
      - tpm_chip # Detect presence of TPM 2.0 chip
      - secure_boot_status # Detect if Secure Boot is enabled/supported
      - fwupd_support # Detect if system hardware supports fwupd for firmware
updates
  ask_proprietary:
    nvidia: install cuda drivers? (with Wayland compatibility layers, GL/Vulkan
support)
    amd: install rocm drivers? (for GPU compute)
    wifi: install firmware?
  step3_storage:
    disk_selection: graphical partition editor
    filesystem_options:
      ext4: default - stable, journaled (recommended)
      btrfs:
        description: advanced - snapshots, compression, subvolumes, send/receive for
robust system management
        features: [snapshots, compression, subvolumes, send/receive, copy-on-write,
data_integrity_checksums]
        subvolume_layout: "@ @home @var @opt @srv @cache @log @tmp @swap" # Standard
layout for root, home, and other system directories
        mount_options: "compress=zstd:3,ssd,noatime,space_cache=v2" # Recommended
mount options for performance and efficiency
        automatic_snapshots:
          enable: true
          frequency: daily, pre-update, pre-boot, pre-kernel-upgrade # Automatic
snapshots for system resilience
          tool: snapper/btrfs-assistant # Tools used for managing snapshots
          snapshot_boot_support: true # Ability to boot into previous system snapshots
via GRUB
        rollback_on_failure: true # Automated rollback if system update or boot
fails
      maintenance_tasks:
        scrub: monthly # Automatic data integrity check
        balance: quarterly # Rebalance data across disks (if multi-device) or
optimize allocation
        defrag: optional # On-demand defragmentation for specific

```

```

files/directories
  zfs: enterprise - raid, deduplication (external modules, for advanced users)
  xfs: performance - large files, databases
  f2fs: flash - ssd/nvme optimized
  ntfs: compatibility - windows dual boot
encryption:
  enable: optional
  method: luks2 aes-256-xts
  recovery_key: generate and display
  tpm_unlock_support: optional # Use TPM 2.0 for automatic LUKS unlock and
integrity verification
  yubikey_support: optional # FIDO2/U2F support for LUKS unlock
  root_filesystem_strategy: # Option for an immutable-like root
  default: mutable_read_write
  advanced_options:
    immutable_root:
      enable: false # Default off, but configurable for advanced/paranoid users
      description: Read-only root with stateful overlayfs for system resilience
and security
      details: 'Requires Btrfs and overlayfs; user changes persist in overlay,
system files are immutable for security and easy rollback. Updates are transactional
via Btrfs snapshots and atomic updates.'
      available_for: [advanced, paranoid]
      update_method: atomic_with_rollback # Ensures system integrity during
updates
    step4_packages:
      base_system:
        components: [minimal kernel, systemd, pipewire, flatpak, systemd-resolved,
fwupd] # PipeWire as default audio, Flatpak for app distribution
        always_installed: true
      desktop:
        none: server headless
        mate: recommended - lightweight, stable (X11 default, Wayland optional
session)
        gnome: modern - touch friendly (Wayland preferred, X11 fallback session)
        xfce: minimal - low resources (X11 only)
        kde: feature rich - customizable (Wayland preferred, X11 fallback session)
        sway: tiling manager (Wayland native, for advanced users, minimal resource)
        hyprland: dynamic tiling manager (Wayland native, GPU-accelerated, for
advanced users)
      bundles:
        gaming:
          - steam
          - lutris
          - wine
          - proton
          - openrgb
          - gamemode # Optimize system for gaming performance
          - mangohud # In-game performance overlay
        development:
          - vscode
          - git
          - docker
          - python
          - gcc
          - nodejs
          - podman # Alternative container runtime for rootless containers
          - nix # Nix package manager for reproducible builds and environments
          - distrobox # Create containerized developer environments
          - devcontainers_support # Integration for VS Code Dev Containers
        multimedia:

```

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- gimp
- blender
- audacity
- kdenlive
- obs
- davinci_resolve_free # Professional video editing (if Debian compatible)
- shotcut
office:
- libreoffice
- thunderbird
- pdf-tools
pentesting:
- nmap
- wireshark
- metasploit
- burpsuite
server:
- nginx
- mariadb
- php
- docker
- fail2ban
- cockpit # Web-based interface for server administration
- cloud_init_tools # For cloud deployments and initial setup
post_install: package manager always available
step5_network:
hostname: ask user or generate furry-{random}
domain: furry.local
wifi_setup: scan and connect during install
firewall: enable ufw by default (with a secure baseline profile)
vpn_setup: # Integrated VPN client setup
enable: optional
protocols: [wireguard, openvpn, ikev2]
client_tools: [network-manager-wireguard, openvpn, strongswan]
dns_privacy:
- dns_over_tls # Configure systemd-resolved for DoT
- dns_over_https # Configure systemd-resolved for DoH
step6_users:
root: locked - console only
admin_user: sudo access, password required
standard_users: optional additional accounts
guest_mode: enable ephemeral guest account?
home_directory_encryption: # Option for systemd-homed encrypted home directories
enable: optional
method: systemd-homed (encrypted, portable, and snapshot-aware home
directories)
available_for: [intermediate, advanced, paranoid]
fido2_passkey_support: optional # Enable FIDO2/Passkey authentication for
systemd-homed
download_packages:
method: parallel downloads from debian mirror
fallback_mirrors:
- deb.debian.org
- ftp.us.debian.org
- ftp.uk.debian.org
cache: save to /var/cache/apt for offline reinstall
taxonomy:
kingdom:
desktop: full gui, mate desktop (X11/Wayland support)
server_full: gui + tui dashboard

```

```

server_headless: pure tui, 150mb ram
embedded: raspberry pi / iot
live_usb: portable, no persistence
immutable_desktop: read-only root, atomic updates, Btrfs snapshots, robust
rollback capabilities
phylum:
  base_distro: debian
  release: bookworm 12
  kernel:
    source: mainline linux kernel
    version: 6.12+
    size: minimal - only essential drivers
    custom_patches:
      - zram
      - realtime-audio
      - pds_scheduler # Process Distribution Scheduler for improved responsiveness
      - bpf_runtime_enhancements # Enhanced BPF for network and security
      - low_latency_optimizations # General kernel tuning for desktop responsiveness
    firmware: downloaded during install if needed (via fwupd)
  bootloader: grub2 (universal compatibility, grub2-efi-signed for Secure Boot
compatibility)
  bootloader_alternatives:
    systemd_boot: optional (for UEFI systems, integrates well with Btrfs snapshots
and atomic updates)
  class:
    x86_64: amd64 primary target
    aarch64: raspberry pi 4/5
    riscv64: future proof
  order:
    granny: maximum ease, automatic updates
    gamer: performance first (with gamemode and optimal drivers), gaming-specific
optimizations
    hacker: development tools, full control, advanced system options, containerization
focus
    ghost: privacy paranoid, immutable by default, enhanced security, network
hardening
  family:
    network:
      dns: systemd-resolved
      firewall: ufw
      ad_blocking: optional post-install (system-wide via AdGuard Home/Pi-hole
integration)
    network_manager: networkmanager (with support for advanced configurations)
  security:
    encryption: luks2
    keygen: ed25519
    secure_boot_support: full # Comprehensive support for UEFI Secure Boot
    tpm_integration: optional_luks_unlock_and_integrity_check # TPM for LUKS unlock
and system integrity verification
    apparmor_profile: default_enforcing # AppArmor enabled by default with a secure
profile
    kernel_hardening: enabled # Default kernel hardening features
    user_auth_methods: [password, fido2, tpm_pin] # Support for multiple
authentication methods
  ui:
    display_server: wayland (preferred), x11 (fallback)
    wayland_compositors: [gnome-shell, kwin, sway, hyprland] # Pre-configured
Wayland compositors
  theme:
    name: furryos-midnight (dark)

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        dynamic_accent_color: true # User-configurable dynamic accent colors
        light_dark_mode_switching: auto_or_manual # Automatic switching based on
time/location or manual toggle
        user_customization: comprehensive # Extensive theming options for all desktop
components (GTK, Qt, Shell)
        icon_theme: furryos-icons-vector # Vector-based icons for scalability
        cursor_theme: furryos-cursors
        gtk_theme_engine: adwaita-qt/kvantum (for consistent look)
        qt_theme_engine: adwaita-qt/kvantum (for consistent look)
        fonts: liberation sans, noto, nerd-fonts (for power users and development),
font_rendering_config (subpixel, hinting)
        boot_animation: plymouth # Themed boot animation
        storage:
            filesystem: user choice (Btrfs recommended for advanced features like snapshots
and resilience)
            swap:
                method: zram (auto-sized with systemd-zram-generator)
                auto_size_ratio: 0.5 # 50% of RAM
                max_size_gb: 16 # Cap ZRAM size to prevent excessive memory usage
                compression_algorithm: zstd # Faster and more efficient compression for ZRAM
                priority: 100 # High priority for zram swap
            audio_server: pipewire # Default and fully configured PipeWire for modern audio
management
            power_management:
                tool: tlp (default) # TLP for optimized power savings on laptops
                options: [auto-tune, laptop-mode-tools, powertop (optional for advanced
analysis)]
            earlyoom: enabled # Prevents system freezes during OOM situations
            app_distribution:
                flatpak: default (integrated into GUI and CLI package managers, with
xdg-desktop-portal support)
                snap: optional (user choice during install or post-install)
                appimage: integrated (desktop file generation and execution permissions)
                distrobox: pre-installed for containerized development environments
            user_management:
                systemd_homed: optional (secure, portable, encrypted home directories)
        genus:
            modules:
                heartbeat: system orchestrator
                healer: watchdog service
                vault: encryption manager
                network_guardian: firewall + ad block
                remote_paw: ssh + rdp manager
                metadata_wrangler: media file tagger
                update_manager: # Dedicated update manager for transactional updates
                    description: handles atomic updates, Btrfs snapshots, and rollbacks for system
stability using systemd-boot/grub-btrfs/snapper
                    type: offline/transactional (e.g., based on systemd-boot/grub-btrfs/snapper)
                    notification_system: desktop_alerts, system_tray_icon
        build:
            iso_type: hybrid (bios + uefi)
            bootloader: grub2
            compression: xz -9
            base_iso:
                auto_download: true
                url: https://cdimage.debian.org/debian-cd/current-live/amd64/iso-hybrid/debian-li
ve-13.2.0-amd64-mate.iso
                checksum_url:
https://cdimage.debian.org/debian-cd/current-live/amd64/iso-hybrid/SHA256SUMS
                verify: true

```

```

included_assets:
  splash_screens: /furryos/assets/splash/*.png
  icons: /furryos/assets/icons/*.svg
  sounds: /furryos/assets/sounds/*.ogg
  wallpapers: /furryos/assets/wallpapers/*.jpg
  fonts: /furryos/assets/fonts/*.ttf
  wayland_compositors_config: /furryos/assets/wayland/*.conf # Configuration files
for Wayland compositors
  xdg_portal_config: /furryos/assets/xdg-portal/*.conf # Configuration for XDG
desktop portals
output:
  name: furryos-{version}-{arch}.iso
  size_target: 300MB
  bootable_methods:
    - usb-dd
    - rufus
    - etcher
    - ventoy
    - secure-boot-uefi # Explicit support for booting with UEFI Secure Boot enabled
compiler:
  cpp: g++
  standard: c++20
  flags: -O3 -flto -Wall -pthread
  linker: -lssl -lcrypto -lsqlite3
python:
  version: 3.12+
  remove_externally_managed: true
  packages:
    - pyyaml
    - requests
    - pillow
    - mutagen
post_install:
  package_manager:
    gui: furryos package browser
    cli: apt
    features:
      - search by category
      - one click install
      - dependency resolution
      - automatic updates (optional, with transactional safeguards)
      - flatpak_integration: true # Seamless management of Flatpak applications
      - snap_integration: optional # Optional management of Snap applications
      - appimage_management: true # Integrated management for AppImage applications
(e.g., desktop entry generation)
      - btrfs_assistant_integration: true # GUI for Btrfs snapshot management
      - theming_tool: furryos-theme-manager # GUI for comprehensive system theming
  asset_downloader:
    anthroheart_pack:
      url: https://anthroheart.com/assets/The_AnthroHeart_Collection_Bundle.7z
      size: 9GB
      optional: true
      description: blockchain verified media library
    furryos_pack:
      url: https://anthroheart.com/assets/FurryOS.7z
      size: 6MB
      description: blockchain verified debian 13 based operating system
  firmware_updater: fwupd # Integrated tool for updating system firmware
pain_points:
  python_externally_managed: removed on install

```

boot\_issues: grub auto-repair + fallback (with Btrfs snapshot boot option for recovery, and systemd-boot for advanced UEFI users)

wifi\_drivers: firmware-iwlwifi, firmware-realtek included (and automatic detection of other needed firmware)

nvidia\_pain: auto-detect, offer driver choice (with full Wayland compatibility considerations, G/Vulkan support)

sound\_issues: pipewire default (full-featured, low-latency setup with robust hardware support and easy device switching)

no\_trailing\_slash: filesystem enforced

no\_spaces\_filenames: auto convert to underscores

auto\_resize\_wallpaper: desktop wallpaper scales right at first

wayland\_app\_compatibility:

description: Some legacy X11 applications may require XWayland; ensure smooth integration

resolution: XWayland enabled by default, clear user guidance and recommended native Wayland apps, robust xdg-desktop-portal implementation

atomic\_update\_resilience:

description: Handling of partial updates or power loss during critical system updates

resolution: Btrfs snapshots and transactional updates (e.g., via `apt-btrfs-snapshot` or `snapper`) mitigate risks and enable easy rollbacks

accessibility:

description: Ensuring the OS is usable for individuals with diverse needs

resolution: Pre-installed screen readers (Orca), high contrast themes, scalable UI elements, and keyboard navigation support

## Chapter 3: The AnthroHeart Saga

The spirit behind the code.



## Chapter 4: The Warlock Name



## Appendix: Asset Gallery

