

Changelog

This is the changelog for the Autopilot Mini Display Yocto/Linux OS

All notable changes to this project will be documented in this file.

[v1.1.1] - 2026-05-07

[v1.1.0] - 2026-05-07

PD-3321 - <https://emri-dk.atlassian.net/browse/PD-3321>

- E27 requirement-to-test traceability reporting (#12)
- add E27 requirement-to-test traceability reporting

Add pytest markers (@pytest.mark.e27) to all 88 HIL tests mapping them to IACS UR E27 item numbers. A conftest hook transfers marker args into JUnit XML elements so reports are self-describing.

New files: - e27_registry.py: 41-item lookup table (title, section, IEC 62443 ref)
- e27_report.py: CLI merging N JUnit XMLs into an HTML traceability matrix with gap analysis

The release workflow now downloads HIL + web JUnit XMLs and attaches the generated E27 traceability report to GitHub Releases.

- fix(test): check journal query result instead of literal 'auth_success' in output

journalctl SECURITY_EVENT=auth_success returns entries whose message text is e.g. 'User hook logged in (role=captain)' — the structured field name does not appear in -o short output. Check for non-empty stdout instead of the literal string.

- complete E27 marker audit and move report to release pipeline
- Full audit of all 41 E27 items across HIL tests
- Update e27_report.py with improved chart layout and axis labels
- Remove DSU document from registry (not same product)
- Add dedicated e27-report job to release.yml (runs on dry-run and real release)
- Include report as release artifact on real releases
- Remove partial report generation from ci.yml PR runs
- fix: skip production-only HIL tests on debug images

Tests for squashfs rootfs, read-only mount, and absence of package managers are inherently production properties. Debug images use ext4 with a writable rootfs and include pip for development.

Add `-image-type` CLI option (debug|production, default production) and `@pytest.mark.production_only` marker. CI debug job now passes `-image-type=debug` so these 3 tests are skipped instead of failing.

- feat: add TLS cipher suite and SWUpdate key strength tests

Add `test_https_no_weak_ciphers` (e27 items 17, 38) to verify the device rejects NULL/RC4/DES/3DES/EXPORT ciphers, and `test_swupdate_key_strength` (e27 items 18, 38) to verify the OTA signing key is ≥ 2048 bits.

Also: make Coverage Depth chart opt-in via `-coverage-depth` flag (used only on dry-run releases), add R&D disclaimer, and fix ruff formatting.

- refactor: rename JUnit XML artifacts for clarity

`os-hil-production-results.xml`, `web-backend-results.xml`, `web-frontend-results.xml`, `eol-hil-results.xml` — names now reflect the source repo and test level.

- fix: use `'head -n 1'` for BusyBox compatibility in key strength test

BusyBox head doesn't support the `'-1'` shorthand, only `'-n 1'`.

- docs: add E27 compliance traceability section to AGENTS.md
- fix: e27-report should not fail pipeline when tests have failures

The report job's purpose is to produce the traceability report. Test failures are already caught by the HIL/test jobs themselves; re-gating here just blocks report artifact upload.

- chore: revert branch refs to master before merge
- fix: address copilot review — tighten assertions and add missing marker
- style: format `test_security_operations.py`
- fix: extend package manager check with broader binary list
- fix: use `auth_interactive` for SSH banner and add 401 to audit patterns

The SSH pre-auth banner (`SSH_MSG_USERAUTH_BANNER`) is only sent during keyboard-interactive auth, not plain password auth. Use `auth_interactive` to trigger banner delivery.

The web API handles authentication internally (not via PAM), so failed logins appear as HTTP 401 in the uvicorn access log. Add `'401 unauthorized'` to the audit trail pattern list.

- chore: remove unused `e27_fetch_docs.py`

Report is test-results only; document evidence is submitted separately.

- fix: use app token for cross-repo web artifact download and normalize EOL filename

The GITHUB_TOKEN cannot access other repos. Use the release bot app token (same as build.yml) for gh release download from pilot-mini-display-web.

Also handle the EOL artifact filename mismatch: test-container currently produces pytest_results.xml; PR #8 renames it to eol-hil-results.xml. Normalize to the expected name until that PR merges.

- refactor: migrate e27 markers from integer IDs to string objective keys

Replace @pytest.mark.e27(N) with @pytest.mark.e27(“objective_key”) across all test files. Registry now maps snake_case keys to item metadata. Report parser simplified — no backward compat for integer values.

- chore: bump pilot-mini-display-web to v0.0.6
- docs: fix stale integer reference in AGENTS.md
- refactor: use -m filter for production_only instead of -image-type

Move test selection to the CLI where it belongs. The confest hook now only handles e27 property injection. Debug CI uses -m ‘not nightly and not production_only’ instead of -image-type=debug.

- fix: match web release asset names (web-backend/frontend-results.xml)
- fix: correct EOL artifact filename and restore missing download params
- fix: rename HIL JUnit XML to os-hil-{suffix}-results.xml convention

Co-authored-by: Emil Jon Granberg jeg@emri.dk

[v1.0.17] - 2026-04-20

PD-3300 - <https://emri-dk.atlassian.net/browse/PD-3300>

- Audit failure resilience (IEC 62443-3-3 SR 2.10)

PD-3304 - <https://emri-dk.atlassian.net/browse/PD-3304>

- Add backup-tool CLI, CI pipeline integration, and static tests

PD-3312 - <https://emri-dk.atlassian.net/browse/PD-3312>

- Rename IMAGE_VARIANT release→production, BBMULTICONFIG production→release (#5)
- refactor: rename IMAGE_VARIANT release→production, BBMULTICONFIG production→release

Aligns naming with actual semantics: “production” is the production image variant, “release” is the multiconfig that builds the release artifact. Eliminates cross-naming confusion.

Refs: PD-3312

- chore: add autopilot 1.0.9 recipe and fix stale comment

Created autopilot_1.0.9.bb via mdu-create-release.sh pointing at ad7a69b which reports “production” in versions.cpp. Also updated GPL comment to say “production images”.

Refs: PD-3312

Co-authored-by: Emil Jon Granberg jeg@emri.dk

PD-3322 - <https://emri-dk.atlassian.net/browse/PD-3322>

- Enforce least functionality (SR 7.7) — egress firewall, password hygiene, rationale doc

PD-3466 - <https://emri-dk.atlassian.net/browse/PD-3466>

- Fix safe.directory, add EOL test trigger, and update autopilot SRCREV
- build.yml: Add safe.directory='*' to .home/.gitconfig so BitBake can fetch from /opt/yocto/downloads/git2/ repos owned by gitlab-runner
- release.yml: Add trigger-eol-tests job that sends repository_dispatch to pilot-mini-display-test-container after a successful release
- autopilot_1.0.8.bb: Update SRCREV from old GitLab SHA (b4058b7) to equivalent GitHub SHA (b76cce7) after LFS history rewrite in PD-3465
- Fix build-sources to keep archive on runner only
- build-sources: Write tar to /opt/yocto/ (runner persistent storage) instead of uploading as a 9+ GB GitHub Actions artifact. Matches the original GitLab behavior (commit fca2fed by Peter Mathiasen).
- release: Remove build-sources from needs chain, artifact download, and release copy. Source archive was never part of GitLab releases.
- ci.yml: Add tags-ignore for v* to prevent duplicate CI runs when pushing a release tag (release.yml already handles tags).

PD-3467 - <https://emri-dk.atlassian.net/browse/PD-3467>

- Migrate CI/CD from GitLab to GitHub Actions

[v1.0.16] - 2026-04-08

PD-3305 - <https://emri-dk.atlassian.net/browse/PD-3305>

- Restrict SSH host key to Ed25519 only

- Add HIL integration tests for trust boundary verification (SR 1.2)

PD-3423 - <https://emri-dk.atlassian.net/browse/PD-3423>

- Network & Web Server Rate Limiting (SR 7.1 RE 1)

PD-3424 - <https://emri-dk.atlassian.net/browse/PD-3424>

- Storage Hardening (SR 7.2)

PD-3425 - <https://emri-dk.atlassian.net/browse/PD-3425>

- Add SSH & WiFi connection limits for DoS protection

PD-3458 - <https://emri-dk.atlassian.net/browse/PD-3458>

- Lock mdu v1.0.8
- bump Autopilot Mini Display version
- Fix cbs-firewall failing when wlan0 is not yet up

nft fails at rule load time when using ‘iif’ for an interface that doesn’t exist yet. Since cbs-firewall.service runs before network-pre.target, wlan0 is not yet created by the WiFi subsystem.

Use ‘iifname’ instead, which matches by interface name string at packet processing time rather than resolving to a kernel interface index at load time. This is the standard nftables pattern for interfaces that may not be present when rules are loaded. - Fix autopilot version tag resolution in BitBake git mirror

BitBake’s git fetcher skips re-fetching when SRCREV already exists in the bare mirror, so tags pushed after the commit was first cached are never picked up. This causes git describe (used by meson vcs_tag) to resolve an older tag, producing wrong –version output in release builds.

Replace do_fetch[nostamp] (which didn’t work due to internal verify_donestamp/need_update checks) with a python do_fetch:append() that explicitly fetches tags into the bare mirror after every fetch.

Also add a HIL test that compares autopilot –version against the installed opkg package version to catch version mismatches. - Use dedicated HIL runner for test jobs

Route hil-test-debug and hil-test-release to the autopilot-mini-display-os-hil runner instead of the default yocto runner. - Use python-base image for HIL test jobs - Drop venv in HIL jobs, install directly in container - Fix SSH host key generation failing on first boot

persist-ssh-hostkeys.service uses ReadWritePaths=/data/etc/ssh for sandboxing. On first boot after a clean flash, this directory doesn’t exist yet because systemd-tmpfiles-setup.service (which creates it via data.conf tmpfiles.d rule)

hadn't run. systemd's namespace setup fails before ExecStart even executes (status=226/NAMESPACE), leaving empty host key placeholders that cause sshd to reset all connections.

Add After=systemd-tmpfiles-setup.service to ensure /data/etc/ssh is created before the service starts. - Remove erroneous autopilot_1.0.9.bb recipe

PD-3562 - <https://emri-dk.atlassian.net/browse/PD-3562>

- Add web version file generation and tag-fetch fix to Yocto recipe

[v1.0.15] - 2026-03-23

PD-3295 - <https://emri-dk.atlassian.net/browse/PD-3295>

- Add password requirements HIL tests

PD-3298 - <https://emri-dk.atlassian.net/browse/PD-3298>

- Update HIL tests for double-submit cookie CSRF design

PD-3303 - <https://emri-dk.atlassian.net/browse/PD-3303>

- Add systemd resource limits and hardening to all services

PD-3305 - <https://emri-dk.atlassian.net/browse/PD-3305>

- Remove zeroconf from DISTRO_FEATURES to disable Avahi/mDNS

Avahi was unintentionally included via Poky default DISTRO_FEATURES. No custom layer depends on zeroconf. Removing it closes unauthenticated UDP ports 5353, 50004, and 45735 on all interfaces. - Disable mDNS and LLNMR in systemd-resolved

With zeroconf removed, systemd-resolved enables its built-in mDNS and LLNMR by default, exposing UDP ports 5353 and 5355 on all interfaces. Add a resolved.conf drop-in to explicitly disable both services. - Add nftables default-deny firewall for IEC 62443 SR 1.2

Defence-in-depth inbound filter loaded early in boot via systemd. Only authenticated services (SSH TCP/22, HTTPS TCP/443) and essential protocols (DHCP, ICMP/ICMPv6) are permitted; all other inbound traffic is dropped by default policy.

New recipes: - nftables-rules: CBS firewall ruleset + systemd oneshot service - nftables bbappend: strip readline (GPL-3.0) and python bindings

PD-3327 - <https://emri-dk.atlassian.net/browse/PD-3327>

- Add system use notification banner for SSH and WebUI

PD-3363 - <https://emri-dk.atlassian.net/browse/PD-3363>

- Resize data partition on release builds

PD-3374 - <https://emri-dk.atlassian.net/browse/PD-3374>

- Add downstream trigger of pilot-mini-display-test-container pipeline

PD-3389 - <https://emri-dk.atlassian.net/browse/PD-3389>

- Add service-tech account expiry

PD-3390 - <https://emri-dk.atlassian.net/browse/PD-3390>

- Add can-gnss-time-sync service and implementation for GNSS time synchronization over CAN

PD-3403 - <https://emri-dk.atlassian.net/browse/PD-3403>

- sync filesystem after user management operations

PD-3421 - <https://emri-dk.atlassian.net/browse/PD-3421>

- Migrate HIL tests from bash to pytest

PD-3432 - <https://emri-dk.atlassian.net/browse/PD-3432>

- Fix Ethernet PHY auto-negotiation failure with unmanaged gigabit switches

PD-3439 - <https://emri-dk.atlassian.net/browse/PD-3439>

- Update logo image for Plymouth theme

PD-3458 - <https://emri-dk.atlassian.net/browse/PD-3458>

- Lock mdu v1.0.7 and web v0.0.4 for release v1.0.15

PD-3492 - <https://emri-dk.atlassian.net/browse/PD-3492>

- add GNSS time sync state machine and HIL tests

[v1.0.14] - 2026-03-04

PD-3295 - <https://emri-dk.atlassian.net/browse/PD-3295>

- Add password quality support

PD-3323 - <https://emri-dk.atlassian.net/browse/PD-3323>

- Add multi-factor authentication (MFA) with TOTP for untrusted network access

PD-3387 - <https://emri-dk.atlassian.net/browse/PD-3387>

- Replace SWUpdate Mongoose webserver with authenticated update page

PD-3401 - <https://emri-dk.atlassian.net/browse/PD-3401>

- Persist SSH host keys across reboots

PD-3438 - <https://emri-dk.atlassian.net/browse/PD-3438>

- Add set-time-from-file service and script to manage system time from persistent file

[v1.0.13] - 2026-02-17

PD-3300 - <https://emri-dk.atlassian.net/browse/PD-3300>

- Add PAM faillock for SSH and WebUI brute-force protection

PD-3384 - <https://emri-dk.atlassian.net/browse/PD-3384>

- Add wifi-ap service for secure credential generation

[v1.0.12] - 2026-02-11

PD-3294 - <https://emri-dk.atlassian.net/browse/PD-3294>

- Add user lifecycle management and API

PD-3369 - <https://emri-dk.atlassian.net/browse/PD-3369>

- Add eeprom digest metadata

PD-3370 - <https://emri-dk.atlassian.net/browse/PD-3370>

- Remove UART completely on release builds

PD-3372 - <https://emri-dk.atlassian.net/browse/PD-3372>

- Export digest metadata for EEPROM, MSD, WIC, SWU files

PD-3381 - <https://emri-dk.atlassian.net/browse/PD-3381>

- Enable HTTPS/TLS for lighttpd WebUI with self-signed certificates
- Add mod_openssl to lighttpd and configure TLS 1.2+ only
- Use NIST-approved cipher suites (AES-GCM, ChaCha20-Poly1305)
- Create tls-certificates recipe for first-boot certificate generation
- Store certificates persistently in /data/certs/ for stable fingerprint
- Add renewal timer for certificate
- Disable HTTP port 80, bind HTTPS on port 443 only
- Update test scripts to use HTTPS with -k flag for self-signed certs

PD-3382 - <https://emri-dk.atlassian.net/browse/PD-3382>

- Harden SSH with NIST-approved cryptographic algorithms

PD-3383 - <https://emri-dk.atlassian.net/browse/PD-3383>

- Disable IP forwarding and harden network stack

[v1.0.9] - 2026-01-30

PD-3292 - <https://emri-dk.atlassian.net/browse/PD-3292>

- Disable login access over UART
- Disable USB host mode

PD-3296 - <https://emri-dk.atlassian.net/browse/PD-3296>

- Add python pam dependency

PD-3297 - <https://emri-dk.atlassian.net/browse/PD-3297>

- Move emri-api to pilot-mini-display-api

[v1.0.8] - 2026-01-22

PD-3293 - <https://emri-dk.atlassian.net/browse/PD-3293>

- Create users at build time
- Create pilot-mini-display-users.inc with role-based user/group structure
- Groups: captain (gid 1000), operator (gid 1001), service-tech (gid 1002)
- Users: autopilot (uid 1000, captain role, password: furuno), operator (uid 1001, no password/login)

- Update autopilot-image.bb to require pilot-mini-display-users.inc
- Update autopilot.service to run as operator user instead of autopilot
- Operator is application user with gpio, wayland, hostapd-admins groups
- Configure SSH restrictions
- Create openssh bbappend in meta-pilot-mini-display
- Disable root SSH login (PermitRootLogin no)
- Disable operator SSH login (DenyUsers operator)
- Only captain and service-tech users can SSH to the system
- Configure account management restrictions
- Create sudo bbappend in meta-pilot-mini-display
- Add /etc/sudoers.d/role-management configuration
- Grant captain group sudo access to useradd, usermod, userdel, passwd, groupadd, groupmod
- Grant service-tech read-only access to account info commands (id, groups, getent)
- Operator has no sudo access

PD-3311 - <https://emri-dk.atlassian.net/browse/PD-3311>

- Trigger eol-container build when releasing
- Trigger mdu pipeline from release

PD-3313 - <https://emri-dk.atlassian.net/browse/PD-3313>

- Fix bug causing gcloud signing to sometimes fail.

[v1.0.4] - 2026-01-14

PD-3219 - <https://emri-dk.atlassian.net/browse/PD-3219>

- Add build-metadata to deploy and release steps

[v1.0.3] - 2026-01-12

PD-2930 - <https://emri-dk.atlassian.net/browse/PD-2930>

- Lock OTP and JTAG by default

Also handles PD-3292 (JTAG).

PD-2941 - <https://emri-dk.atlassian.net/browse/PD-2941>

- can-utils

PD-3183 - <https://emri-dk.atlassian.net/browse/PD-3183>

- Add missing /data/etc directory

This commit is the culmination of a rather long debug session. The conclusion is that, on read/write systems the /data/etc was never created. But the system-settings.service just assumed it had been created. The one responsible for creating /data/etc before this commit was a volatile-bind service that on read-only systems created a bind mount from /data/etc/UNIT to /etc/UNIT. If /data/etc/UNIT did not exist, the mount-copybind script would just copy the /etc/UNIT to /etc/data/UNIT and create all missing paths at the same time.

In this commit we allow system-settings.service to create the missing directory itself.

PD-3189 - <https://emri-dk.atlassian.net/browse/PD-3189>

- Store license information from releases

PD-3219 - <https://emri-dk.atlassian.net/browse/PD-3219>

- Generate build metadata

PD-3268 - <https://emri-dk.atlassian.net/browse/PD-3268>

- Only update development debug device with debug image

PD-3276 - <https://emri-dk.atlassian.net/browse/PD-3276>

- Add service-agent credentials to build development autopilot-image

[v1.0.1] - 2025-11-12

PD-3088 - <https://emri-dk.atlassian.net/browse/PD-3088>

- Add development keys to yocto and gitlab ci

PD-3137 - <https://emri-dk.atlassian.net/browse/PD-3137>

- Publish msd and eeprom archives to release artifacts

[v1.0.0] - 2025-10-31

PD-2492 - <https://emri-dk.atlassian.net/browse/PD-2492>

- Add boot-splash

PD-2645 - <https://emri-dk.atlassian.net/browse/PD-2645>

- Expand data partition to use available space on debug

PD-2689 - <https://emri-dk.atlassian.net/browse/PD-2689>

- Add rtc trim as oneshot service

PD-2827 - <https://emri-dk.atlassian.net/browse/PD-2827>

- Replace captive-portal routing with direct QR link

PD-2904 - <https://emri-dk.atlassian.net/browse/PD-2904>

- swupdate: remove system restart link

PD-2931 - <https://emri-dk.atlassian.net/browse/PD-2931>

- Add eeprom to release artifacts
- Add msd to release artifacts

PD-2949 - <https://emri-dk.atlassian.net/browse/PD-2949>

- Add gcloud recipe
- Add hsm_wrapper script for cloud kms signing

PD-2970 - <https://emri-dk.atlassian.net/browse/PD-2970>

- CAN not working on release image

PD-2971 - <https://emri-dk.atlassian.net/browse/PD-2971>

- IP address not showing in application in releases image

PD-2976 - <https://emri-dk.atlassian.net/browse/PD-2976>

- Sign swupdate with google kms

PD-2979 - <https://emri-dk.atlassian.net/browse/PD-2979>

- removed unused swupdate-certs recipe
- Add KMS public key to swupdate

PD-3088 - <https://emri-dk.atlassian.net/browse/PD-3088>

- Add Google KMS Workload Identity Federation and Release Keys

PD-3091 - <https://emri-dk.atlassian.net/browse/PD-3091>

- Creating release v1.0.0

PD-3100 - <https://emri-dk.atlassian.net/browse/PD-3100>

- Use external antenna

PD-3102 - <https://emri-dk.atlassian.net/browse/PD-3102>

- Fix swupdate handlers exception

PD-3121 - <https://emri-dk.atlassian.net/browse/PD-3121>

- Add git describe to os-release

[v0.1.0] - 2025-09-05

PD-1767 - <https://emri-dk.atlassian.net/browse/PD-1767>

- Add license info to image
- add license for each package

PD-2136 - <https://emri-dk.atlassian.net/browse/PD-2136>

- Added secure boot
- Disabled u-boot
- Building initramfs to use in boot.img
- Signing boot.img to produce boot.sig

PD-2140 - <https://emri-dk.atlassian.net/browse/PD-2140>

- Buzzer bring up

PD-2156 - <https://emri-dk.atlassian.net/browse/PD-2156>

- Implement buzzer driver API

PD-2160 - <https://emri-dk.atlassian.net/browse/PD-2160>

- swupdate with secure boot

PD-2161 - <https://emri-dk.atlassian.net/browse/PD-2161>

- Add signed software updates (also remove postupdate.sh)

Add CMS verification of software updates.

- Installed emri-swu.cert.pem certificate on the device (the private key is not deployed)
- Add sw-description.sig to the .swu file
- Add kernel option for swupdate to work properly with signed updates
- Updated swupdate.cfg to reflect the changes to signed updates (also added postupdatecmd to get rid of the script and extra cli argument)
- Change to RSA encryption in SWU

PD-2187 - <https://emri-dk.atlassian.net/browse/PD-2187>

- Autoboot with secure and non-secure boot

Review comments

Review comments

Disable swupdate test until it works with secure boot

PD-2188 - <https://emri-dk.atlassian.net/browse/PD-2188>

- Add root overlay to make rootfs read-only

When the system boots with secure boot, the rootfs is mounted as a read-only files system on /rofs and used as the lower filesystem in an overlayfs fused filesystem solution.

The overlay resides in a volatile data partition (tmpfs) and mounted as /.

The benefit of using overlayfs is that the system is unaware that rootfs is read-only so writes are still possible.

Since the overlay resides in volatile memory each restart will be the same as a factory reset.

In reality we probably need to have some persistent storage for certain logs, for which a persistent data storage have been added as well (mmcblk0p7). Logs will have to be manually written/redirected to the data partition.

It is also possible to place the entire overlay on the data partition to make the entire overlay persistent. Doing so would require strict control of how much we write to the eMMC block device to ensure we keep it below acceptable levels in terms of wear leveling.

PD-2189 - <https://emri-dk.atlassian.net/browse/PD-2189>

- Add EMRI MDU hardware to CI build

PD-2194 - <https://emri-dk.atlassian.net/browse/PD-2194>

- Force display to be enabled (with digital output)
- Configuration of output during boot

PD-2205 - <https://emri-dk.atlassian.net/browse/PD-2205>

- Enable CI test

PD-2208 - <https://emri-dk.atlassian.net/browse/PD-2208>

- Add autopilot test to bless boot

PD-2209 - <https://emri-dk.atlassian.net/browse/PD-2209>

- Added mcp251xfd overlay to enable CAN

PD-2238 - <https://emri-dk.atlassian.net/browse/PD-2238>

- Disable timesyncd

PD-2242 - <https://emri-dk.atlassian.net/browse/PD-2242>

- Setup and test dimming pwm

PD-2243 - <https://emri-dk.atlassian.net/browse/PD-2243>

- Adding debug and release images

PD-2244 - <https://emri-dk.atlassian.net/browse/PD-2244>

- Setup CAN interfaces on boot

PD-2248 - <https://emri-dk.atlassian.net/browse/PD-2248>

- Common include file for MDU machines

PD-2251 - <https://emri-dk.atlassian.net/browse/PD-2251>

- Move logs to persistent storage

PD-2327 - <https://emri-dk.atlassian.net/browse/PD-2327>

- Added gdbserver to debug image

PD-2361 - <https://emri-dk.atlassian.net/browse/PD-2361>

- MDU: Icons are distorted on hardware

PD-2364 - <https://emri-dk.atlassian.net/browse/PD-2364>

- Added packages to sdk

PD-2373 - <https://emri-dk.atlassian.net/browse/PD-2373>

- Add can termination service

PD-2374 - <https://emri-dk.atlassian.net/browse/PD-2374>

- Read version from hardware

PD-2397 - <https://emri-dk.atlassian.net/browse/PD-2397>

- Update boot partition with swupdate

PD-2421 - <https://emri-dk.atlassian.net/browse/PD-2421>

- Enable Wi-Fi hotspot mode

PD-2425 - <https://emri-dk.atlassian.net/browse/PD-2425>

- Redirect all WIFI http requests to software update page

Install dnsmasq and lighttpd and add configurations:

- The MDU WIFI hotspot will promote itself as DNS server for connected DHCP clients
- dnsmasq will resolve all host names to the MDU itself so that e.g. google.com will have the MDU IP address 192.168.4.1
- lighttpd will redirect all HTTP request (e.g. `http://\[google.com = 192.168.4.1\]/someweirdpage.html`) to `http://192.168.4.1:8080` i.e. the swupdate page.

Created by excuting:

```
recipetool appendfile -w ../meta-mdu /etc/lighttpd/lighttpd.conf ../poky/meta/recipes-extended/lighttpd/lighttpd.conf
recipetool appendfile -w ../meta-mdu /etc/dnsmasq.conf ../meta-openembedded/meta-networking/dnsmasq.conf
```

In lighttpd.conf, the following was modified

- server.modules: enabled `mod_redirect`
- Added “Support for captive portal” section with a redirect

Closes PD-2425

PD-2430 - <https://emri-dk.atlassian.net/browse/PD-2430>

- Update brightness steps
- Changed number of steps to 101

- Setting default backlight percentage

PD-2452 - <https://emri-dk.atlassian.net/browse/PD-2452>

- Configure journal log

PD-2453 - <https://emri-dk.atlassian.net/browse/PD-2453>

- Setup test environment of release image on device with secure boot enabled

PD-2457 - <https://emri-dk.atlassian.net/browse/PD-2457>

- Turn on backlight when application starts

PD-2468 - <https://emri-dk.atlassian.net/browse/PD-2468>

- Configure and verify RTC

PD-2469 - <https://emri-dk.atlassian.net/browse/PD-2469>

- Change pwm config for buzzer to gpio (gpio 13)

PD-2475 - <https://emri-dk.atlassian.net/browse/PD-2475>

- Resize data partition to fill eMMC

PD-2480 - <https://emri-dk.atlassian.net/browse/PD-2480>

- Bugfix: Crash in lv_timer_handle

PD-2538 - <https://emri-dk.atlassian.net/browse/PD-2538>

- Add boost-json dependency

PD-2544 - <https://emri-dk.atlassian.net/browse/PD-2544>

- Add emri-api - service, script and bb-recipe

Also putting shared bb content in a separate file to be included

PD-2546 - <https://emri-dk.atlassian.net/browse/PD-2546>

- Factory reset service

PD-2555 - <https://emri-dk.atlassian.net/browse/PD-2555>

- Install service-mode landing page and redirect to that
- Install all application/www files

PD-2556 - <https://emri-dk.atlassian.net/browse/PD-2556>

- Add python3-zipstream-ng package

PD-2571 - <https://emri-dk.atlassian.net/browse/PD-2571>

- Software release flow

PD-2572 - <https://emri-dk.atlassian.net/browse/PD-2572>

- Copy system settings on boot

PD-2605 - <https://emri-dk.atlassian.net/browse/PD-2605>

- Remove '-mode' suffix

PD-2673 - <https://emri-dk.atlassian.net/browse/PD-2673>

- Test production software releas
- Updated release documentation
- Added release script

PD-2675 - <https://emri-dk.atlassian.net/browse/PD-2675>

- dnsmasq: log only to journal log
- logrotate: rotate wtmp log file

PD-2676 - <https://emri-dk.atlassian.net/browse/PD-2676>

- lighttpd: log to journal log

PD-2677 - <https://emri-dk.atlassian.net/browse/PD-2677>

- swupdate: do not log to syslog

PD-2678 - <https://emri-dk.atlassian.net/browse/PD-2678>

- Storing core dump files on the data partition

PD-2722 - <https://emri-dk.atlassian.net/browse/PD-2722>

- systemd: disable serial-getty@ttyS0

PD-2745 - <https://emri-dk.atlassian.net/browse/PD-2745>

- systemd: specify ttyAMA0 as console

PD-2755 - <https://emri-dk.atlassian.net/browse/PD-2755>

- autopilot: restart on exit

PD-2778 - <https://emri-dk.atlassian.net/browse/PD-2778>

- Brightness gamma correction curve
- Use gamma curve of 2.0 with a small low-end floor of 2 to accommodate the LED driver dead zone.
- Change PWM periode to 100 Hz to optimize dynamic range on HW platform

PD-2791 - <https://emri-dk.atlassian.net/browse/PD-2791>

- Set weston background to brightness_test.png