

See at sourceforge.net

Windows binary [here](#).

This file includes highlights of the changes made in the OpenOCD source archive release.

JTAG Layer:

- * New driver for J-Link adapters based on libjaylink (including support for FPGA configuration and EMUCOM)
- * FTDI improvements to work at 30MHz clock
- * BCM2835 native driver SWD and Raspberry Pi2 support
- * BCM2835 is set to 4ma drive, slow slew rate
- * ixo-usb-jtag (emulation of an Altera Bus Blaster I on Cypress FX2 IC) support
- * JTAG pass-through mode for CMSIS-DAP (including support for FPGA configuration)
- * OpenJTAG support for Cypress CY7C65215
- * connect_assert_srst support for SWD
- * Xilinx Virtex-II Series7 bitstream loading support
- * Use JEP106 data to decode IDs
- * Deprecated "ft232" driver removed (use "ftdi" instead)
- * GPL-incompatible FTDI D2XX library support dropped (Presto, OpenJTAG and USB-Blaster I are using libftdi only now)
- * ZY1000 support dropped (unmaintained since long)
- * oocd_trace support dropped

Boundary Scan:

Target Layer:

- * ARMv7-A, Cortex-M, Cortex-A/R important fixes and improvements (allowing e.g. simultaneous debugging of A8 and M3 cores, JTAG WAIT support etc.)
- * ARM Cortex-A,R allow interrupt disable during single-step (maskir command)
- * Semihosting support for ARMv7-A
- * ARM Cortex-M7 support
- * Intel Quark mcu D2000 support
- * Freescale LS102x SAP support
- * ThreadX RTOS support on ARM926E-JS
- * Cortex-M RTOS stack alignment fixes
- * FreeRTOS FPU support
- * uC/OS-III RTOS support
- * bridging semihosting to GDB's File-I/O support
- * -defer-examine option added to target create command
- * verify_image_checksum command added

Flash Layer:

- * Atmel SAM4S, SAM4N, SAM4C support
- * Atmel SAMV, SAMS, SAME (Cortex-M7) support
- * Atmel AT91SAMd handle reset run/halt in DSU, other fixes
- * Atmel AT91SAML21, SAML22, SAMC20/SAMC21, SAMD09 support
- * ST STM32F4x support
- * ST STM32F74x/76x/77x, STM32L4 support
- * ST STM32L0 categories 1, 2 and 5 support
- * Kinetis K02, K21, K22, K24, K26, K63, K64, K66 support
- * Kinetis KE, KVx, K8x families support
- * Kinetis FlexNVM handling
- * Kinetis flash protection, security, mass_erase improvements
- * Infineon XMC4xxx family support
- * Infineon XMC1000 flash driver
- * Energy Micro EFM32 Happy Gecko support
- * Energy Micro EFM32 debug interface lock support
- * Analog Devices ADuCM360 support
- * Unified Nuvoton NuMicro flash driver
- * NIIET K1921VK01T (Cortex-M4) support
- * Nordic Semiconductor nRF51 improvements
- * Spansion FM4 flash (including MB9BFx64/x65, S6E2DH) driver
- * Ambiq Micro Apollo flash driver
- * PIC32MX new device IDs, 17x/27x flash support

- * read_bank() and verify_bank() NOR flash internal API to allow reading (and verifying) non-memory-mapped devices
- * JTAGSPI driver to access SPI NOR flashes via a trivial FPGA proxy
- * Milandr read/verify for Info memory support
- * Various discrete SPI NOR flashes support
- * CFI 16-bit flash reversed endianness support

Board, Target, and Interface Configuration Scripts:

- * Digilent JTAG-HS2, JTAG-HS3 interfaces configs
- * FTDI UM232H module as JTAG interface config
- * 100ask's OpenJTAG interface config
- * MBFTDI interface config
- * XDS100v3 interface config
- * Freescale Vybrid VF6xx target config
- * EmCraft VF6 SOM and baseboard configs
- * Freescale SabreSD board config
- * Freescale VF65GS10 tower board config
- * Pipistrello Xilinx Spartan6 LX45 FPGA board config
- * miniSpartan6+ board config
- * Xilinx Kintex7 Development board config
- * Parallella-I board config
- * Digilent Atlys and Analog Discovery board configs
- * Numato Opsi board config
- * Xilinx Spartan 6 FPGA "Device DNA" reading support
- * Altera 10M50 FPGA (MAX10 family) target config
- * Altera EPM240 CPLD (MAXII family) target config
- * Marsohod2, Marsohod3 FPGA, Marsohod CPLD boards configs
- * Novena's integrated FPGA board config
- * XMOS XS1-XAU8A-10's ARM core config
- * XMOS xCORE-XA Core Module board config
- * Exynos5250 target config
- * Arndale board config
- * FM4 MB9BFxxx family configs
- * Spansion SK-FM4-U120-9B560 board config
- * Diolan LPC4357-DB1 board config
- * ST STM32F469 discovery board config
- * ST STM32F7-DISCO, STM327[4|5]6G-EVAL boards configs
- * ST STM32L4 discovery, NUCLEO L476RG, STM32F429I-DISC1 boards configs
- * Atheros AR2313, AR2315 targets config
- * Netgear WP102 board config
- * La Fonera FON2200 board config
- * Linksys WAG200G board config
- * LPC-Link2 board config
- * NXP LPC4370 target config
- * Atmel SAMV, SAMS, SAME target configs
- * Atmel SAM E70 Xplained, SAM V71 Xplained Ultra boards configs
- * Nordic nRF52 target config
- * Nordic nRF51-DK, nRF52-DK boards configs
- * Infineon XMC4700 Relax Kit, XMC4800 Relax EtherCAT Kit, XMC4300 Relax EtherCAT Kit boards configs
- * Renesas S7G2 target config
- * Renesas DK-S7G2 board config
- * Altera EP3C10 FPGA (Cyclone III family) target config
- * TI MSP432P4xx target config
- * Cypress PSoC 5LP target config
- * Analog Devices ADSP-SC58x target config (Cortex-A5 core only)

Server Layer:

- * tcl_trace command for async target trace output via Tcl RPC

Documentation:

Build and Release:

- * Various fixes thanks to [\[url\]](#)
- * libftdi is now autodetected with pkgconfig
- * Releases should now support reproducible builds
- * Conversion to non-recursive make, requires automake >= 1.14
- * Udev rules modified to add uaccess tag and moved to 60-openocd.rules
- * Support searching for scripts relative to the openocd binary for all major architectures

This release also contains a number of other important functional and cosmetic bugfixes. For more details about what has changed since the last release, see the [git repository history](#).