IDF Monitor: Tips & Tricks

Peter Dragúň

Table of content

IDF Monitor

- `idf.py monitor` , but also in Espressif IDE, and VS Code extension
- Also available as separate package by running: `python -m esp_idf_monitor`
- Repository: https://github.com/espressif/esp-idf-monitor
- Most of the features available for all methods

Output Filtering

- `--print_filter=<tag>:<log_level>`

- log_level = `{N, E, W, I, D, V, *}`

- `N` : for suppressing selected tag

- e.g. to filter all errors and info with `tag1` but exclude `tag2` use: `--print_filter="*:E tag1:I tag2:N"`

Menu Options

- CTRL + T; CTRL + H

```
--- esp_idf_monitor (1.5.0) - ESP-IDF Monitor tool
--- based on miniterm from pySerial
---
--- Ctrl+]   Exit program
--- Ctrl+T   Menu escape key, followed by:
--- Menu keys:
---     Ctrl+T         Send the menu character itself to remote
---     Ctrl+]         Send the exit character itself to remote
---     Ctrl+R         Reset target board via RTS line
---     Ctrl+F         Build & flash project
---     Ctrl+A (or A)  Build & flash app only
---     Ctrl+Y         Toggle output display
---     Ctrl+L         Toggle saving output into file
---     Ctrl+I (or I)  Toggle printing timestamps
---     Ctrl+P         Reset target into bootloader via the DTR/RTS lines
---     Ctrl+X (or X)  Exit program
```

- *Short demo* (reflash app and reset)

Config File

- customize menu keys, reset sequence and delays
- `esp-idf-monitor.cfg` , `setup.cfg` , `tox.ini`
- current directory, `$HOME/.config/` , `$HOME/`

Configurable Reset Sequences

- **Use case:** Special HW with requirement for longer delays
- example of custom reset sequence to bootloader

```
[esp-idf-monitor]
custom_reset_sequence = U0,1|W0.1|D1|R0|W0.5|D0
```

- **U**: DTR,RTS (Unix only) ; **W**: wait; **D**: DTR; **R**: RTS
- Option to share this configuration with Esptool - `setup.cfg` or `tox.ini`
- More details in the next slide and IDF Monitor README: https://github.com/espressif/esp-idf-monitor#custom-reset-sequence

Configurable Shortcuts

- Most keyboard shortcuts are configurable!

- Option to skip pressing the menu key (CTRL + T)

- **Use case:** localized keyboards (issues with CTRL +])

- See documentation at https://github.com/espressif/esp-idf-monitor#configuration-file

```
[esp-idf-monitor]
exit_key = W
```

Decoding Functions

- address decoding using the `addr2line` tool from ELF file

- panic decoding `--decode-panic backtrace` (default on)

- coredump decoding `--decode-coredumps info` (default package: off, IDF: on)

- GDB - needs to be enabled in menuconfig -> CTRL + C (not configurable)

- *Short demo*

Recent Features

- auto log colors on the host side (default behavior)

- multiple ELF file support for address and panic decoding (**only for package**)

- option to connect to port that is not yet available - e.g. chip is connected using USB JTAG/Serial and currently in a deep sleep: `--open-port-attempts N` N:-1 for infinite loop (**only for package**)

Future Plans

- support for multiple ELF files in ESP-IDF

- running monitor without attaching STDIN to TTY

- configurable shortcut for GDB?