2014-06-17

Question from Bob

> Please could you make a matrix of all the different architecture / Tizen version combinations? I think Tizen Common is new for 3.x, so the matrix for Tizen 2.x might be much simpler. Tizen Common Web page has a table of architectures. Not sure how simulator fits into that.

Haven't had a chance to prepare a clear summary of all of this today, but here is how the images I'm talking in this document fit in what I gathered (so far) of the Tizen landscape:

Arch vs.Version	1.0	2.0	2.1	2.2	2.2.1	2.3	3.0/Mobile	3.0/IVI
i586					X			
x86_64								
armv7l							X	

Work summary

Today, I have:

- Observed the successful build of Mono HEAD on the `tizen_20140602.4_RD-PQ` ARM image (the name of the corresponding VM is `tizn`). No patch was necessary, and the resulting Mono is able to build and execute a small `hello-world.cs`;
- Set up a few other VMs besides `tizn`; here is a catalog:

VM	Arch	Kernel	Base image
`tizn`	`armv7l`	`3.2.0-4-vexpress`	`tizen_20140602.4_RD-PQ`
`teiz`	`armv7l`	`3.2.0-4-vexpress`	`tizen_20140602.4_RD-PQ`
`thaz`	`i586`	`bzImage.x86`	`emulimg-2.2.x86`
`thuz`	`i586`	`bzImage.x86`	`emulimg-2.2.x86`

  The last two are based on the kernel and base image provided with the Tizen 2.2 SDK (x86 only).

Here are two other (native) environments I am using for comparing results:

Machine	Arch	OS
mini	x86_64	Debian Testing
kaia	x86_64	Mac OS X

- Completed a first run of `make check` on `teiz` (ARM). The results are messy, but the gist of it is:

  1. Low-level VM tests:

     ```
     Overall results: tests: 20064, 100% pass, opt combinations: 24
     ```

  2. Mono tests:

     ```
     Testing ackermann.exe... pass.
     ...
     Testing xdomain-threads.exe... pass.
     423 test(s) passed. 3 test(s) did not pass.

     Failed tests:

     block_guard_restore_aligment_on_exit.exe
     bug-18026.exe
     finally_block_ending_in_dead_bb.exe
     ```

     I have also built Mono HEAD on `mini` and `kaia`; these tests pass in both environments.

  3. Other tests (?):

     ```
     PASS: test-sgen-qsort
     PASS: test-gc-memfuncs
     ...
     PASS: test-mono-linked-list-set
     ==================
     All 3 tests passed
     ==================
     ```

  4. Some other random stuff, with some failures, to be investigated (TODO).

  You can get a copy of the full logs in this repository:

  http://dd.crosstwine.com/git/?p=kitsilano/mono-tizen/make-check-logs.git

- Compiled Mono HEAD on the `emulimg-2.2.x86` Intel image (no patch was necessary), and run its tests on `thaz` (cf. above repository for logs.)

    1. Low-level VM tests:

        ```
        Overall results: tests: 22572, 100% pass, opt combinations: 27
        ```

    2. Mono tests:

        ```
        Testing ackermann.exe... pass.
        ...
        Testing xdomain-threads.exe... pass.
        426 test(s) passed. 2 test(s) did not pass.

        Failed tests:

        gc-altstack.exe
        marshal7.exe
        ```

    3. Other tests (?):

        ```
        ==================
        All 3 tests passed
        ==================
        ```

    4. Some other random stuff, with some failures, to be investigated (TODO).

- Noticed that `--disable-mcs-build` means that the `mcs/` (C# libraries) tests are skipped, even after copying the required IL libraries from another build. TODO: figure out how to force execution of these tests, or do a full build on the emulator;

In parallel, I have also:

- Compiled `distcc` for ARM, and made it accessible from the VMs. This, combined with the cross-compilers built yesterday, distributes compilation tasks to other, desktop-class machines and considerably speeds up the builds.

- Uploaded an ARM tarball of the compiled Mono:

    http://phio.crosstwine.com/tmp/tizn-2014-06-17.tar.gz

    This *should* work on the RD-PQ device (note: extraction has to be done as root!):

```
$ cd /
$ tar xzvf tizn-2014-06-17.tar.gz
$ export PATH="$PATH:/opt/crosstwine/mono-tizen/opt/mono/bin"
$ cd /tmp
$ cat > foo.cs
...
$ mcs foo.cs
$ ls foo.*
foo.cs  foo.exe
$ mono foo.exe
Hello World!
Press any key to exit.
```

- Started collecting VMs at:

  http://dd.crosstwine.com/git/?p=kitsilano/mono-tizen/vms.git

  Note: `vms` and `tarballs` are Git Annex (https://git-annex.branchable.com/) repositories, so cloning them won't give you access to the full data yet. It has been backed up on multiple devices; I will figure out how to share it later.

Tomorrow, I:

- Will figure out how to, and run Mono's collection of (core) NUnit tests on the two Tizen images;
- Will investigate and start packaging Mono as a Tizen RPM;
- Will start investigating the following failures:

  ```
  block_guard_restore_aligment_on_exit.exe
  bug-18026.exe
  finally_block_ending_in_dead_bb.exe

  gc-altstack.exe
  marshal7.exe
  ```

Questions to Bob

These are not blocking in any way, but may help make decisions later:

1. Tizen 2.3 seems to be wearable-only. Is that what runs on your Gear2?
2. Is your NUC based on Atom (E38xx) or Haswell (core i5)?