

HTX for POWER8 Embedded Platforms

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Summary

HTX is a suite of test tools provided on the OpenPOWER github by IBM for validating a system based on the POWER8 processor. In its original form, it is intended to be run on a full up system which would normally run a version of Linux such as Ubuntu. Our port of HTX is for an embedded platform which has essentially none of the support features that the full up system provides such as mass storage, networking, or even USB. Therefore it is packaged as part of the PNOR and can be made to fit into the 32M byte PNOR flash image depending on the tests required.

Details

This version of HTX is modified to be built within the buildroot/op-build package from the OpenPOWER github repository. To make it build for our embedded platform a number of modifications were required:

- 1) The default op-build petitboot/linux that is built is missing a number of configuration features which required modifications to the defconfigs for skiroot, etc. Examples are "CONFIG_HUGETLBFS=y", "CONFIG_CGROUPS=y", CONFIG_HOTPLUG_CPU=y".
- 2) Perl is used by HTX scripts at runtime to customize the HTX installation to the target platform, therefore it is required to be built along with HTX. Unfortunately, the default PERL install is large. Therefore, to make the rootfs fit within the 32Mbyte size limitation of the PNOR image, after the rootfs is created, un-necessary components of the full PERL installation are removed.
- 3) The BASH shell is also required by the HTX scripts, so the BASH package is added to the op-build.
- 4) Other commands such as "awk" and "getconfig" command are used by HTX scripts, they were also added in the final rootfs.
- 5) Only the necessary components of HTX were included in the final rootfs, therefore we removed HTX components from its build that have to do with testing networking, filesystems, etc. Removing these parts of HTX also eliminated HTX's build dependency on other external libraries such as libdapl, libibverbs, etc.