

1. Introduction

OpenMP is a group of application programming interfaces (APIs) supporting multi-platform shared-memory parallel programming in C/C++ and Fortran. The OpenMP API defines a portable, scalable model with a simple and flexible interface for developing parallel applications.

The VxWorks® OpenMP solution provides OpenMP run-time libraries and compiler updates.

2. Prepare and Install

2.1. Install RPMs

Use the VxWorks installer to install the new compiler and OpenMP run-time library RPM packages:

intel_compiler_vxworks_common-15.0.0.024-0.noarch.rpm

intel_compiler_vxworks_linux-15.0.0.024-0.noarch.rpm

intel_compiler_vxworks_toolchain_config-15.0.0.0-vx7_20150312.noarch.rpm

intel_compiler_vxworks_windows-15.0.0.024-0.noarch.rpm

os_lang-lib_openmp_container-0.0.0.1-vx7_20150312.noarch.rpm

os_lang-lib_openmp_kernel-0.0.0.1-vx7_20150312.noarch.rpm

os_lang-lib_openmp_usr-0.0.0.1-vx7_20150312.noarch.rpm

2.2. Configure and Build

Create a VxWorks source build (VSB) based on board support package (BSP) `itl_64_vx7` with symmetric multiprocessing (SMP) and secondary compiler enabled. Enable the layers: `OPENMP_KERNEL` `OPENMP_USR` and build project.

Create a VxWorks image project (VIP) base on the previous VSB, select the toolchain with Intel C++ Compiler (ICC), and add the components: `INCLUDE_OPENMP`.

Add OpenMP build flag `"-fopenmp"` to the project: right-click **VIP Project** in Wind River® Workbench, select **Properties -> Build Properties**. Find the **Tools** tab and add `"-fopenmp"` to "Build spec specific settings."

Drop your OpenMP code into the VIP project and build it.

There is an OpenMP sample case contained in this package. Samples are located in `$(VxWorksInstalledPath)/vxworks-7/pkg/os/lang-lib/openmp/kernel-0.0.0.1/src/demo/ompTest.c`

Add components INCLUDE_OPENMP_DEMO, and the call routine “ompTest” in the VxWorks shell will show this sample demonstration.

3. Other Tips

OpenMP website: <http://openmp.org/wp/>

OpenMP specifications: <http://openmp.org/wp/openmp-specifications/>