hackmd.io

Install Intel C/C++ Compiler (ICC) 2021.4.0 - HackMD

3 minutes

tags: ORAN, ICC

Reference: Issue in installing ICC

Version

- For O-DU Emerald version, can use oneapi 2021.4.0
- For O-DU F Version, use 2022.1.0

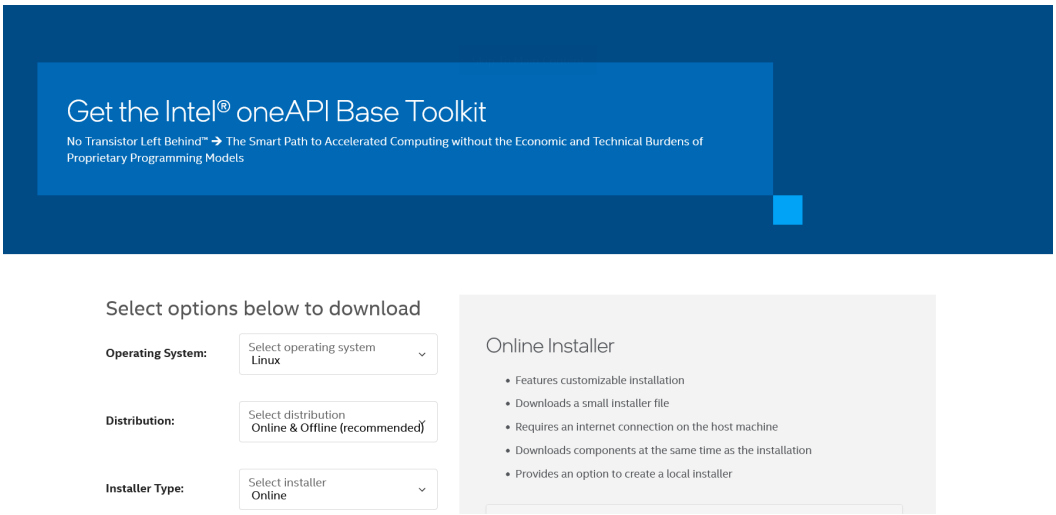
Background

- Compile for CPUs, GPUs, and FPGAs with an LLVM technology-based compiler that enables custom accelerator tuning and supports OpenMP for GPU offload.
- Used to compile O-DU software

OneAPI 2021.4.0

Install Intel oneAPI Base ToolKit

1. Go to Intel Download Center



2. Use command line to download installation script

[oran@localhost ~]$ wget https://registrationcenter-download.intel.com/akdlm/irc_nas/18236/l_BaseKit_p_2021.4.0.3422.sh

3. Execute downloaded script via

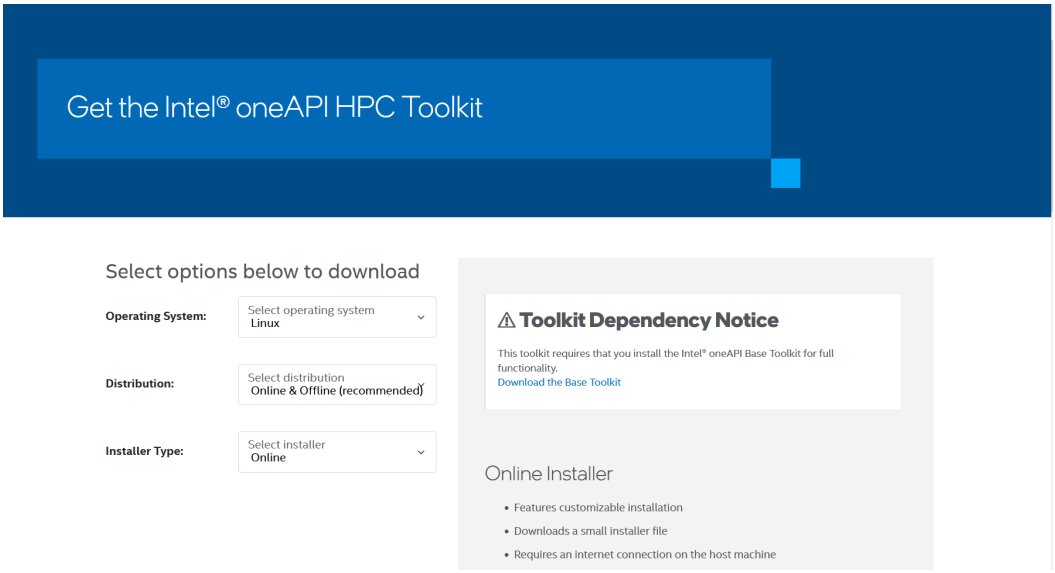
[oran@localhost ~]$ sudo sh <script-name>.sh -a --silent --eula accept

For more options, please refer to Installation Guide
4. Wait for a while, and the installation will complete

```
[oran@localhost icc]$ sudo sh l_BaseKit_p_2021.4.0.3422.sh -a -s --eula accept
Extract l_BaseKit_p_2021.4.0.3422 to /home/oran/icc/l_BaseKit_p_2021.4.0.3422...
[########################################################################################################################################################]
Extract l_BaseKit_p_2021.4.0.3422 completed!
Checking system requirements...
Done.
Wait while the installer is preparing...
Done.
Launching the installer...
Intel® Graphics Compute Runtime for OpenCL™ not found.
You have no relevant GPU driver. If you are going to develop and run GPU-accelerated applications on this system, please check the <a href="https:/
/software.intel.com/content/www/us/en/develop/documentation/installation-guide-for-intel-oneapi-toolkits-linux/top/install-intel-gpu-drivers.html">
installation guide</a> for instructions on the GPU drivers.<br/>Otherwise, you can ignore the warning and continue the installation as is: the prod
uct can still be used with CPU.
Start installation flow...
Installed Location: /opt/intel/oneapi
Installation has successfully completed
Log file: /opt/intel/oneapi/logs/installer.install.intel.oneapi.lin.basekit.product,v=2021.4.0-3422.2021.11.21.06.55.29.032049.log
Remove extracted files: /home/oran/icc/l_BaseKit_p_2021.4.0.3422...
```

Install Intel oneAPI HPC ToolKit

1. Go to Intel Download Center



2. Use command line to download installation script

[oran@localhost ~]$ wget https://registrationcenter-download.intel.com/akdlm/irc_nas/18211/l_HPCKit_p_2021.4.0.3347.sh

3. Execute downloaded script via

[oran@localhost ~]$ sudo sh <script-name>.sh -a --silent --eula accept

For more options, please refer to Installation Guide
4. Wait for a while, and the installation will complete

```
[oran@localhost icc]$ sudo sh l_HPCKit_p_2021.4.0.3347.sh -a -s --eula accept
[sudo] password for oran:
Extract l_HPCKit_p_2021.4.0.3347 to /home/oran/icc/l_HPCKit_p_2021.4.0.3347...
[##################################################################################################################################################]
Extract l_HPCKit_p_2021.4.0.3347 completed!
Checking system requirements...
Done.
Wait while the installer is preparing...
Done.
Launching the installer...
Start installation flow...
Installed Location: /opt/intel/oneapi
Installation has successfully completed
Log file: /opt/intel/oneapi/logs/installer.install.intel.oneapi.lin.hpckit.product,v=2021.4.0-3347.2021.11.21.10.41.08.743198.log
Remove extracted files: /home/oran/icc/l_HPCKit_p_2021.4.0.3347...
```

Configure Environment Variable

1. Open ~/.bashrc
2. Append following environment variable

export INTEL_ONEAPI_ROOT=/opt/intel/oneapi
export PATH=$PATH:$INTEL_ONEAPI_ROOT/compiler/2021.4.0/env:$INTEL_ONEAPI_ROOT/compiler/2021.4.0/linux/bin/intel64

3. After edit is completed, it will be like

```
# User specific aliases and functions
export RTE_SDK=~/DPDK/dpdk-19.11
export RTE_TARGET=x86_64-native-linuxapp-icc
export GTEST_ROOT=~/gtest-1.7.0
export DIR_ROOT_GTEST=~/gtest-1.7.0
export INTEL_ONEAPI_ROOT=/opt/intel/oneapi
source /home/oran/phy/setupenv.sh

export PATH=$PATH:$INTEL_ONEAPI_ROOT/compiler/2021.4.0/env:$INTEL_ONEAPI_ROOT/compiler/2021.4.0/linux/bin/intel64
```

Some environment variables will be set in other sections.
Just focus on the variables we set above.

Create iccvar.sh

- Because we need iccvars.sh in other section and the file in current version is called vars.sh, we copy vars.sh to iccvars.sh.

[oran@localhost ~]$ sudo cp /opt/intel/oneapi/compiler/2021.4.0 /env/vars.sh /opt/intel/oneapi/compiler/2021.4.0/env/iccvars.sh

Verify installation

1. Check icc

[oran@localhost ~]$ icc --version
icc (ICC) 2021.4.0 20210910
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

2. Check icpc

[oran@localhost ~]$ icpc --version
icpc (ICC) 2021.4.0 20210910
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

3. Check iccvars.sh

[oran@localhost ~]$ which iccvars.sh
/opt/intel/oneapi/compiler/2021.4.0/env/iccvars.sh