Instruction for installation of DVM-system on the Linux operating system for local use

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Note. Ubuntu 14.04 is used in this manual, but many other related distributions are also supported. Administrator privileges are required for the installation of standard and proprietary packages.

1. The following compilers are required for a minimal build: `C`, `C++`, `Fortran` compilers and `make`, `subversion` and `diffutils` utilities. You should run the following command to install them:

   ```
   sudo apt-get install gcc g++ gfortran make diffutils subversion
   ```

   Note. Many other versions of compilers are supported, for example, Intel C ++, Intel Fortran

2. You need to install LLVM and Clang to use C-DVMH compiler

   Note. Optional, needed only for installation of C-DVMH compiler.

   The following versions of LLVM are supported: 3.4 – 3.8. This component can be installed in one of the following ways:

   (a)
   ```
   sudo apt-get install llvm-3.4-dev libclang-3.4-dev
   ```

   (b)
   ```
   sudo apt-get install llvm-3.5-dev libclang-3.5-dev zlib1g-dev
   libffi-dev libedit-dev libtinfodev
   ```

   (c)
   ```
   sudo apt-get install llvm-3.6-dev libclang-3.6-dev zlib1g-dev
   libffi-dev libedit-dev libtinfodev
   ```

   (d)
   ```
   sudo apt-get install llvm-3.7-dev libclang-3.7-dev zlib1g-dev
   libffi-dev libedit-dev libtinfodev
   ```

   (e)
   ```
   sudo apt-get install llvm-3.8-dev libclang-3.8-dev zlib1g-dev
   libffi-dev libedit-dev libtinfodev
   ```

3. You need to install one of the following MPI implementations to use the interprocessor interactions:

   (a)
   ```
   sudo apt-get install mpich libmpich-dev
   ```

   (b)
   ```
   sudo apt-get install libopenmpi-dev openmpi-bin
   ```

   Note 1. Optional, but *strictly recommended*: a lot of RTS-DVM functionality depend on MPI.

   Note 2. Many other implementations of MPI are supported, for example, Intel MPI.

4. You need to download and install the latest CudaToolkit in order to use the NVidia CUDA graphics accelerators.

   Note. Optional, not necessary if you have no GPU NVidia.

5. You need to install `libunwind` utility to improve stack trace in case a program crashes by the following command:

   ```
   sudo apt-get install libunwind8-dev
   ```

   Note. Optional, other relevant version may be used.

6. You need to download DVM-system with the following command:

```
svn co --username guest --password guest
http://svn.dvm-system.org/svn/dvmhrepo/dvm/releases/current-trunk DVM
```

7. Next, you need to perform the installation script `dvminstall` from the `DVM/dvm_sys` directory.. You will see message `DVM-system is successfully installed` if the installation went OK and the error otherwise. If an error occurred, you can contact us to solve your installation problems through this form. We recommend you to save the whole installation log.

To simplify usage of the system you can install the DVM-system in a minimalist manner to the specified directory:

Option 1. You need run the following command to install DVM-system to the directory `/usr/local`:

```
sudo INSTALL_DIR=/usr/local/dvm
INSTALL_BIN=/usr/local/bin dvm_sys/dvminstall
```

The downloaded from SVN directory `dvm_sys` can be deleted, DVM-system will be used from `INSTALL_DIR`.

Option 2. You need run the following command to install only DVM-system's driver to the directory ∼/`bin`

```
INSTALL_BIN=~/bin dvm_sys/dvminstall
```

In this case the downloaded from SVN directory `dvm_sys` *can not be deleted*.

The detailed information about DVM system is on DVM site.
Questions and notes should be sent to the address: dvm@keldysh.ru.